

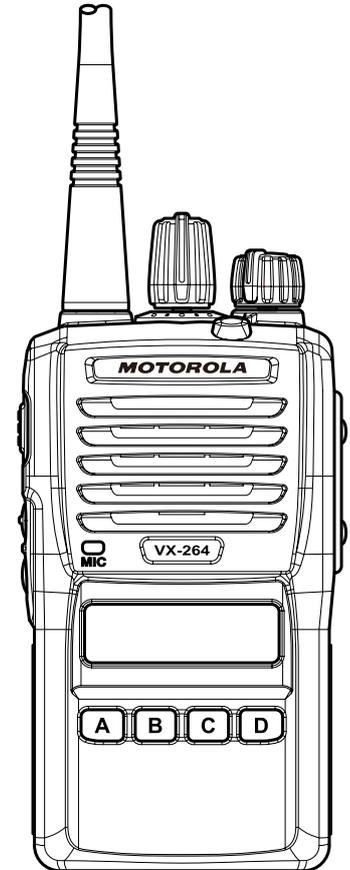


VX-264

OPERATING MANUAL

PROGRAMMABLE FUNCTIONS/FEATURES

- IP55 Water Resistant
- Six Programmable Function Keys
- 2-Tone Encode/Decode
- 5-Tone Encode/Decode
- MDC-1200® Encode/Decode
- DTMF Encode
- Scan
- Group Scan
- Dual Watch
- Follow-Me Scan
- Talk Around Scan
- Voice Inversion Encryption
- VOX
- Talk Around
- Emergency
- Lone Worker
- TX Save Disable
- Lock
- ARTS™ (Auto Range Transpond System)



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Congratulations!

You now have at your fingertips a valuable communications tool, a Motorola Solutions two-way radio! Rugged, reliable and easy to use, your Motorola Solutions radio will keep you in constant touch with your colleagues for years to come, with negligible maintenance down-time. Please take a few minutes to read this manual carefully. The information presented here will allow you to derive maximum performance from your radio, in case questions arise later on.

Important Note

- There are no owner-serviceable parts inside the radio. All service jobs must be referred to an authorized Motorola Solutions Service Representative.
- In order to maintain the specified water integrity performance, periodic maintenance is recommended.
- Should the radio sustain a severe shock (e.g. if it is dropped), the water integrity may be compromised, requiring service. Should this occur, contact your Authorized Motorola Solutions Dealer.

INTRODUCTION

The **VX-264** is full-featured Hand-Held Analog Transceiver designed for business communications in the VHF/UHF Land Mobile bands. This transceiver is designed for reliable business communications in a wide variety of applications with a wide range of operating capability provided by their leading-edge design, and allows up to 128-channel capacity within a maximum 8 groups. Each channel can be programmed with an 8-character Alpha-Numeric Tag.

Important channel frequency data is stored in the flash memory, and is easily programmable by a Motorola Solutions licensed dealers using a personal computer with Motorola Solutions Programming equipment: **FIF-12** USB Programming Interface, and **CT-106** Connection cable with **CE150** PC Programming Software. Or, once a single radio is programmed, cloning cable **CT-27** can be used to program additional radios directly.

This manual will describe the details of the many advanced features of the **VX-264**. After reading this manual, you may wish to consult with your Network Administrator regarding precise details of the configuration of this equipment for use in your application.

Important Notice for North American Users Regarding 406 MHz Guard Band

The U.S. Coast Guard and National Oceanographic and Atmospheric Administration have requested the cooperation of the U.S. Federal Communications Commission in preserving the integrity of the protected frequency range 406.0 to 406.1 MHz, which is reserved for use by distress beacons. Do not attempt to program this apparatus, under any circumstances, for operation in the frequency range 406.0 - 406.1 MHz if the apparatus is to be used in or near North America.

Warning - Frequency band 406 - 406.1 MHz is reserved for use ONLY as a distress beacon by the US Coast Guard and NOAA. Under no circumstance should this frequency band be part of the pre programmed operating frequencies of this radio.

IMPORTANT SAFETY INFORMATION

ENGLISH

ATTENTION!

This radio is restricted to Occupational use only. Before using the radio, read the RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable standards and Regulations.

For a list of Motorola Solutions-approved antennas and other accessories, visit the following website:
<http://www.motorolasolutions.com>

Any modification to this device, not expressly authorized by Motorola Solutions, may void the user's authority to operate this device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter has been approved by Industry Canada to operate with Motorola Solutions-approved antenna with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

IMPORTANT SAFETY INFORMATION

ENGLISH

Notice to Users (FCC and Industry Canada)

This device complies with Part 15 of the FCC rules and Industry Canada's license-exempt RSS's per the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications made to this device, not expressly approved by Motorola Solutions, could void the authority of the user to operate this equipment.

CONSIGNES DE SÉCURITÉ IMPORTANTES

FRENCH

ATTENTION!

Cette radio ne doit être utilisée qu'à des fins professionnelles. Avant d'utiliser la radio, lisez le guide Radios bidirectionnelles portatives : exposition aux radiofréquences et sécurité du produit, qui contient d'importantes instructions de fonctionnement pour une utilisation sécuritaire et des informations sur l'exposition aux fréquences radioélectriques, dans le but d'assurer votre conformité aux normes et règlements en vigueur.

Visitez le site Web suivant pour obtenir la liste des antennes et autres accessoires approuvés par Motorola Solutions:
<http://www.motorolasolutions.com>

Toute modification effectuée à cet appareil sans l'autorisation explicite de Motorola Solutions peut annuler l'autorisation d'utiliser cet appareil.

Selon la réglementation d'Industrie Canada, cet émetteur radio ne peut être utilisé qu'avec une antenne dont le type et le gain maximal (ou minimal) sont approuvés par

Industrie Canada pour cet émetteur. Afin de limiter les interférences radio pour les autres utilisateurs, le type et le gain de l'antenne doivent être choisis de façon à ce que la puissance isotrope rayonnée équivalente (P.I.R.E.) ne soit pas plus forte qu'il ne le faut pour établir la communication.

Cet émetteur radio a été approuvé par Industrie Canada pour utilisation avec une antenne approuvée par Motorola Solutions offrant le gain maximal autorisé et l'impédance requise pour le type d'antenne indiqué. Il est strictement interdit d'utiliser avec cet appareil tout type d'antenne ne figurant pas dans cette liste et présentant un gain supérieur au maximum indiqué pour le type.

CONSIGNES DE SÉCURITÉ IMPORTANTES

FRENCH

Avis aux utilisateurs (FCC et Industrie Canada)

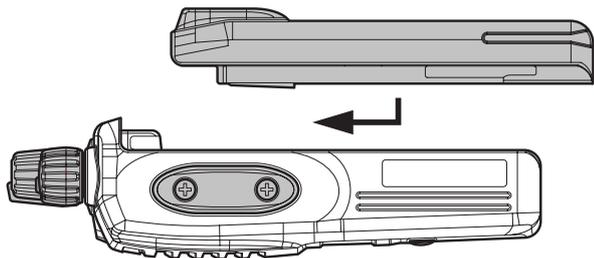
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence et à la partie 15 des règlements de la FCC.

- Cet appareil ne doit pas causer d'interférence nuisible.
- Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.
- Toute modification effectuée à cet appareil sans l'autorisation explicite de Motorola Solutions peut annuler l'autorisation d'utiliser cet appareil.

BEFORE YOU BEGIN

Battery Pack Installation and Removal

- ❑ To install the battery pack, align the battery pack to the radio with an offset about 1/2 inch (1.5 cm) from the top edge of battery compartment, then slide the battery pack upward until it locks in place with a “*Click.*”

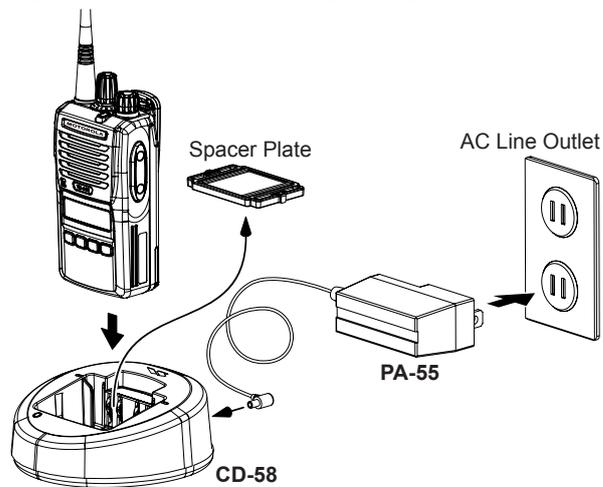


- ❑ To remove the battery, turn the radio off and remove any protective cases. Slide the Battery Pack Latch on the bottom of the radio toward the front panel while sliding the battery down about 1/2 inch (1.5 cm). Then lift the battery out from the radio.

 **Do not attempt to open any of the rechargeable Lithium-Ion packs, as they could explode if accidentally short-circuited.**

Battery Charging

- ❑ Remove the Spacer Plate from the nest of the optional **CD-58** Desktop Charger, if the Battery Spacer is installed.
- ❑ Insert the DC plug from the optional **PA-55** AC Adapter into the DC jack on the rear panel of the optional **CD-58** Desktop Charger, and then connect the **PA-55** AC Adapter to the AC line outlet.
- ❑ Insert the battery pack into the **CD-58** Desktop Charger while aligning the slots of the battery pack with the guides in the nest of the **CD-58**; refer to the following illustration for details on proper positioning of the



BEFORE YOU BEGIN

battery pack. If charging with the transceiver attached, turn the transceiver off. The antenna jack should be at the left side when viewing the charger from the front.

- ❑ If the battery pack is inserted correctly, the LED indicator will glow red. A fully-discharged battery pack will charge completely in 1.5 - 3.0 hours (depending on the battery pack being charged).
- ❑ When charging is completed, the LED indicator will change to green.
- ❑ Disconnect the battery pack from the **CD-58** Desktop Charger and unplug the **PA-55** AC Adapter from the AC line outlet.



1) Always use the Motorola Solutions FNB-V133LI-UNI or FNB-V134LI-UNI Lithium-Ion Battery Pack.

2) Use only the Motorola Solutions CD-58 Desktop Charger and the Motorola Solutions PA-55 AC Adapter.

3) To reduce the risk of explosion, recharge the batteries outside of hazardous locations.

4) Perform the battery charging where the ambient temperature range +41 °F to +104 °F (+5 °C to +40 °C). Charging outside of this temperature range could cause damage to the battery pack.

5) Battery Pack should not be exposed to excessive heat such as sunshine, fire, or similar heat sources.

6) Risk of explosion exists if battery is replaced by an incorrect type. Refer to the enclosed instructions for disposal of used batteries.

7) For further details and cautions of the charging, refer to the Operating Manual of the CD-58 Desktop Charger.

Low Battery Indication

As the battery discharges during use, the voltage gradually becomes lower. When the battery voltage becomes too low, substitute a freshly charged battery and recharge the depleted pack. The LED indicator on the top of the radio will blink red when the battery voltage is low.

You may confirm the battery condition by the Battery Icon on the display. See page 11 for more information.

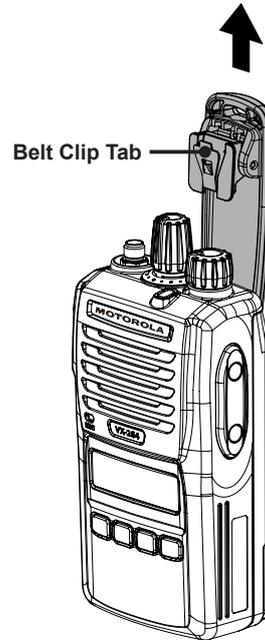
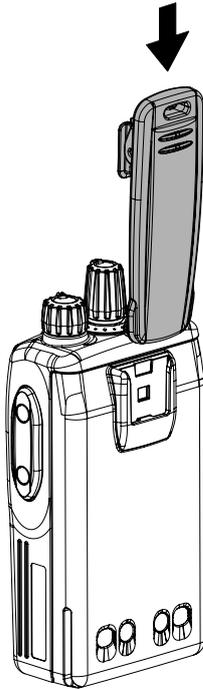
CAUTION

Danger of explosion if battery is replaced with an incorrect battery. Replace only with the same or equivalent type.

BEFORE YOU BEGIN

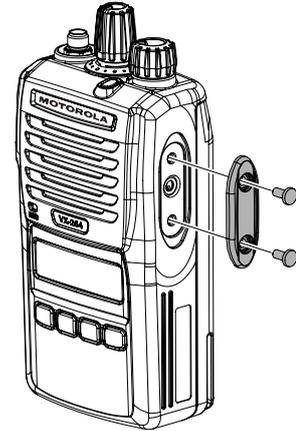
Belt Clip Installation and Removal

- ❑ To install the Belt Clip: align the Belt Clip to the groove of the Battery pack, then press the Belt Clip downward until it locks in place with a “Click.”
- ❑ To remove the Belt Clip: use a flat head screw driver to press the Belt Clip Tab away from the battery pack to unlock the Belt Clip, then slide the Belt Clip upward to remove it.



MIC/SP CAP Installation

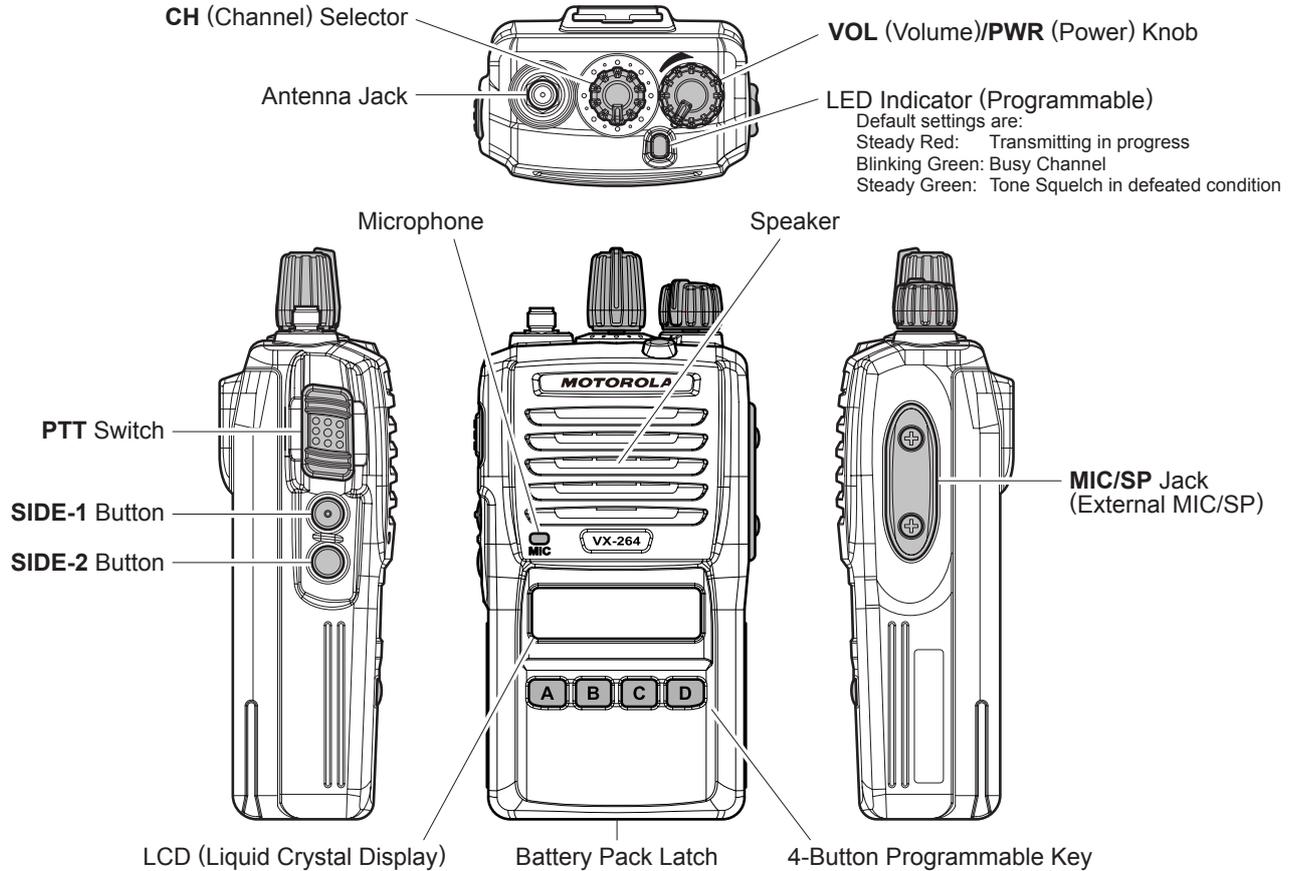
Install the **MIC/SP** cap with the supplied screws.



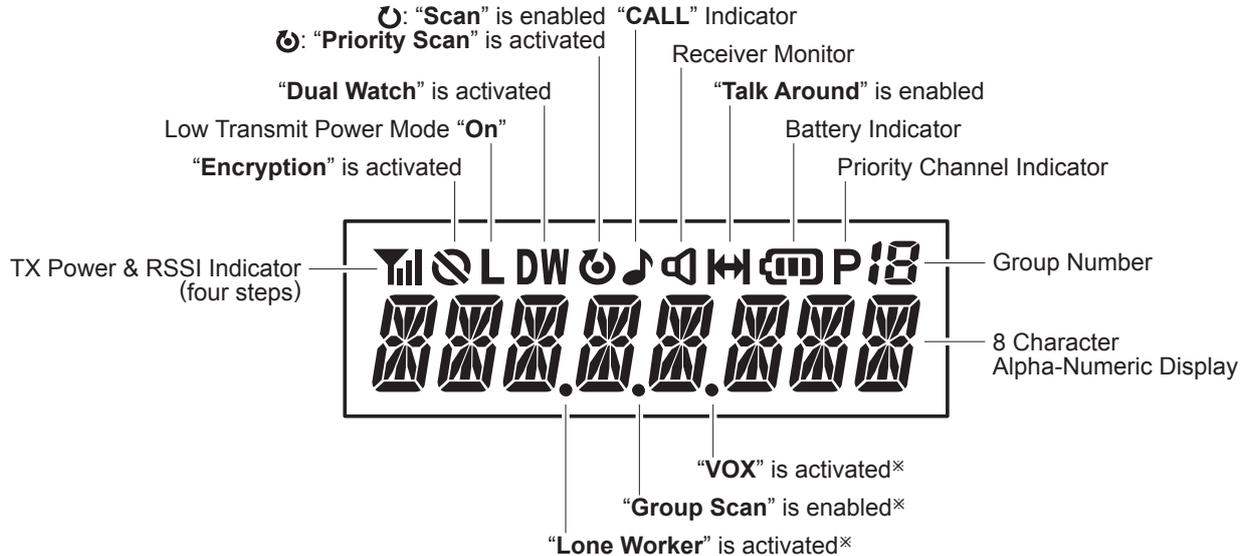
- ❑ Use only the supplied screws when install the **MIC/SP** cap.
- ❑ This radio does not keep the **Water Resistant Rating (IP55)** when the **MIC/SP** cap is not installed in the **MIC/SP** jack.

NOTE

CONTROLS & CONNECTORS



LCD ICONS & INDICATORS



※ These small dot appears continuously until each function is turned "OFF", regardless of the operation of other features.

For example, when activates the Emergency feature while the Lone Worker feature is activating, the display indicate at the right.



"Lone Worker" is activated

BATTERY INDICATOR
: Full Battery Power
: Moderate Battery Power
: Low Battery Power
w/blink : Poor Battery Power (Charge the Battery)

OPERATION

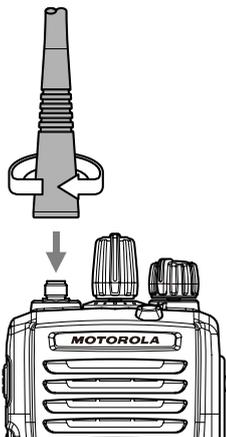
Preliminary Steps

- ❑ Install a charged battery pack onto the transceiver, as described on page 8 of this manual.

- ❑ Screw the supplied antenna onto the Antenna jack.

It is not recommended to operate this transceiver without an antenna connected.

- ❑ If you have a Speaker/Microphone, we recommend that it not be connected until you are familiar with the basic operation of the **VX-264**. Refer to next page for more information about Speaker/Microphone usage.



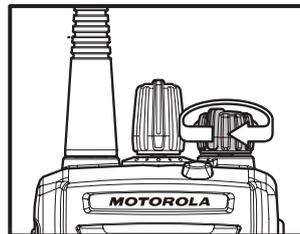
IMPORTANT NOTE

The water resistance rating of the transceiver (IP55) is assured only when the following conditions are met:

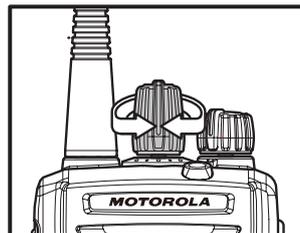
- ❑ Battery pack is attached to the transceiver;
- ❑ Antenna is connected to the antenna jack;
- ❑ **MIC/SP** cap is installed in the **MIC/SP** jack.
- ❑ Use of a speaker microphone in the **MIC/SP** jack negates the IP55 rating.

Operation Quick Start

- ❑ Turn the top panel's **VOL/PWR** knob clockwise to turn the radio on.



- ❑ Turn the top panel's **CH** Selector knob to choose the desired operating channel. A channel name will appear on the LCD.

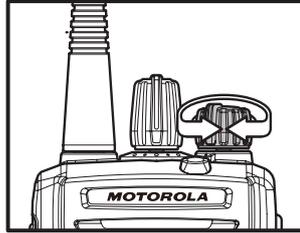


- ❑ If you want to select the operating channel from a different Channel Group, press (or press and hold) the Programmable key assigned to the “**GROUP UP/DOWN**” function to change desired Channel Group before selecting the operating channel.

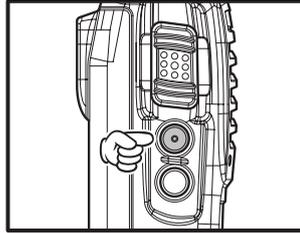
Note: Some models are programmed so that the operating channels are selected by the Programmable key and the Channel Group is selected by the **CH** Selector knob. For further details, contact your Motorola Solutions dealer.

OPERATION

- ❑ Rotate the **VOL/PWR** knob to set the volume level. If no signal is present, press (or press and hold) the Programmable key (assigned to the “**SQL OFF**” function:



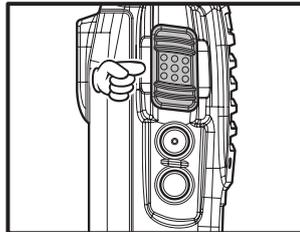
Normally **SIDE-1** button); background noise will now be heard, and you may use this to set the **VOL/PWR** knob for the desired audio level. Press (or press and hold) the Programmable key again to quiet the noise and re-



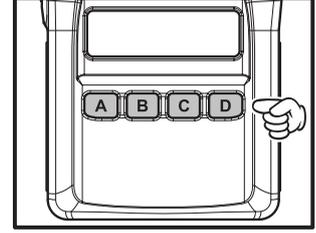
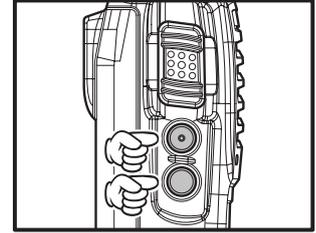
sume normal (quiet) monitoring.

- ❑ To transmit, monitor the channel and make sure it is clear.

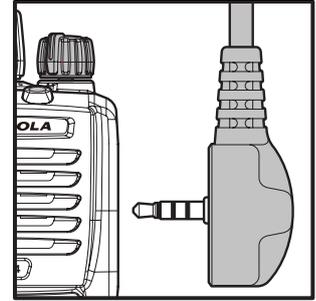
Press and hold the **PTT** switch. Speak into the microphone area of the front panel grille in a normal voice level. To return to the Receive mode, release the **PTT** switch.



- ❑ Press (or press and hold) the **SIDE-1**, **SIDE-2** button, or front panel's programmable keypad (**[A]** - **[D]** key) to activate one of the pre-programmed functions which may have been enabled at the time of programming by the dealer. See the next chapter for details regarding feature availability for this radio.



- ❑ If a Speaker/Microphone is available, remove the plastic cap and its two mounting screws from the right side of the transceiver, then align the connector of the Speaker/Microphone on the radio; secure the connector pin using the screws supplied with the Speaker/Microphone. Hold the speaker grille up next to your ear while receiving. To transmit, press the **PTT** switch



OPERATION

on the Speaker/Microphone, just as you would on the main transceiver's body, and speak into the microphone on a normal voice level.

Note 1): Save the original plastic cap and its mounting screws. They should be reinstalled when not using the Speaker/Microphone.

2) When you press the PTT switch on the Speaker/Microphone, it disables the internal microphone, and vice versa.

- ❑ If the BCLO (Busy Channel Lockout) feature has been programmed on a channel, the radio will not transmit when a carrier is present. Instead, the radio will generate short beep three times. Release the **PTT** switch and wait for the channel to be clear of activity.
- ❑ If the BTLO (Busy Tone Lockout) feature has been programmed on a channel, the radio can transmit only when there is no carrier being received or when the carrier being received includes the correct tone (CTCSS tone or DCS code).

Automatic Time-Out Timer

If the selected channel has been programmed for automatic time-out, you must limit the length of each transmission. While transmitting, a beep will sound 10 seconds before time-out. Another beep will sound just before the deadline; the top panel's red LED ("**TX**" indicator) will disappear and transmission will cease soon thereafter. To resume transmitting, you must release the **PTT** switch and wait for the "penalty timer" to expire.

ADVANCED OPERATION

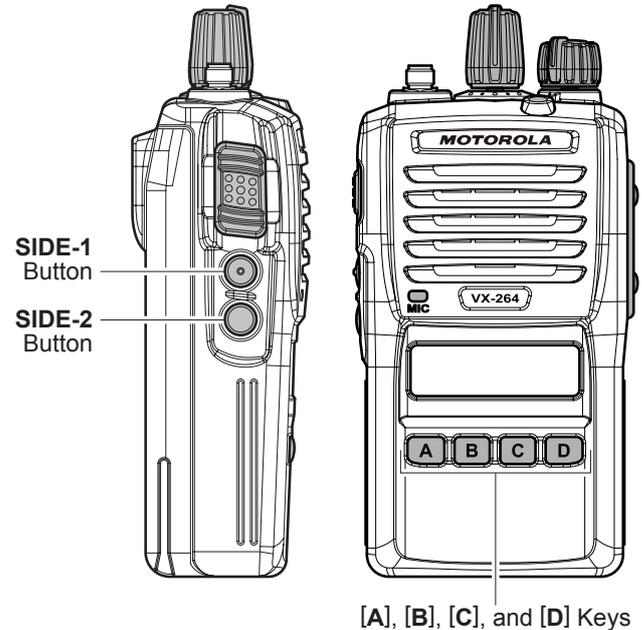
Programmable Key Functions

The **VX-264** provides six programmable function (**PF**) keys: **SIDE-1**, **SIDE-2**, **[A]**, **[B]**, **[C]**, and **[D]** keys.

These **PF** keys can be customized, via programming by your Motorola Solutions dealer, to meet your communications/network requirements.

The possible **PF** key programming features are illustrated on the next page, and their functions are explained beginning after page 18. For further details, contact your Motorola Solutions dealer.

For future reference, check the box next to each function that has been assigned to the **PF** key on your particular radio, and keep it handy.



ADVANCED OPERATION

FUNCTION	PROGRAMMABLE KEY (PRESS KEY / PRESS AND HOLD KEY)					
	SIDE-1	SIDE-2	[A]	[B]	[C]	[D]
None	/	/	/	/	/	/
Monitor	/	/	/	/	/	/
Monitor -Momentarily-	/—	/—	/—	/—	/—	/—
Lamp	/	/	/	/	/	/
Low Power	/	/	/	/	/	/
Encryption	/	/	/	/	/	/
SQL OFF	/	/	/	/	/	/
SQL OFF -Momentarily-	/—	/—	/—	/—	/—	/—
SQL Set	/	/	/	/	/	/
Beep OFF	/	/	/	/	/	/
Whisper	/	/	/	/	/	/
VOX	/	/	/	/	/	/
VOX Set	/	/	/	/	/	/
VOX Anti-Trip	/	/	/	/	/	/
Emergency	/—	/—	/—	/—	/—	/—
Lone Worker	/	/	/	/	/	/
Group Up	/	/	/	/	/	/
Group Down	/	/	/	/	/	/
Channel Up	/	/	/	/	/	/
Channel Down	/	/	/	/	/	/
PRI	/	/	/	/	/	/
Scan	/	/	/	/	/	/
Group Scan	/	/	/	/	/	/
Group Scan Set	/	/	/	/	/	/
Dual Watch	/	/	/	/	/	/
Follow-Me Scan	/	/	/	/	/	/
Scan Set	/	/	/	/	/	/
TA (Talk Around) Scan	/	/	/	/	/	/

ADVANCED OPERATION

FUNCTION	PROGRAMMABLE KEY (PRESS KEY / PRESS AND HOLD KEY)					
	SIDE-1	SIDE-2	[A]	[B]	[C]	[D]
Talk Around	/	/	/	/	/	/
Reset	/	/	/	/	/	/
Call 1	/	/	/	/	/	/
Call 2	/	/	/	/	/	/
Call 3	/	/	/	/	/	/
Code Up	/	/	/	/	/	/
Code Down	/	/	/	/	/	/
Code Set	/	/	/	/	/	/
Speed Dial	/	/	/	/	/	/
Call	/	/	/	/	/	/
Duty	/	/	/	/	/	/
Tx Save Disable	/	/	/	/	/	/
Lock	/	/	/	/	/	/

ADVANCED OPERATION

Description of Operating Functions

MONITOR

Press, (or press and hold), the assigned **PF** key to cancel any signaling features; the LED indicator will glow green.

The “” icon will be indicated on the display, when the Monitor function is activated.

MONITOR -MOMENTARILY-

Cancel any signaling features while pressing the assigned **PF** key.

The “” icon will be indicated on the display while canceling any signaling features.

LAMP

Press, (or press and hold), the assigned **PF** key to toggle the back light of the display “On” and “Off”.

LOW POWER

Press, (or press and hold), the assigned **PF** key to set the radio’s transmitter to “Low Power” mode, thus extending battery life. Press, (or press and hold), the assigned **PF** key again to return to “High Power” mode when in RF impeding environments.

The “**L**” icon will be indicated on the display when the radio’s transmitter is set to “Low Power” mode.

ENCRYPTION

When the Voice Scrambler feature is enabled, press, (or press and hold), the assigned **PF** key to toggle the Voice Encryption “On” and “Off”.

The “” icon will be indicated on the display when the Voice Scrambler is activated.

SQL OFF

Press, (or press and hold), the assigned **PF** key to open the SQL to hear background noise (unmute the audio).

The “” icon will blink on the display when the SQL OFF function is activated.

SQL OFF -MOMENTARILY-

Opens the SQL to hear background noise (unmute the audio) while pressing the assigned **PF** key.

The “” icon will blink on the display while opening the SQL.

ADVANCED OPERATION

SQL SET

You can manually adjust the squelch level using this function:

- ❑ Press, (or press and hold), the assigned **PF** key. A tone will sound, and the current squelch level will appear on the display.
- ❑ Press the **SIDE-1/SIDE-2** buttons (or **[A]/[B]** keys) to select the desired squelch level. Available selections are “-15” to “+15”.
- ❑ Press the **[D]** key to store the new setting. The display indicates “- **SAVED** -” briefly, then reverts to the normal channel indication.

You may cancel the new setting by pressing the **[C]** key. In this case, the display indicates “- **CANCEL** -” briefly.

BEEP OFF

Press, (or press and hold), the assigned **PF** key to disable any radio beeps temporarily. Press again, (or press and hold again), the assigned **PF** key to enable any radio beeps.

When the Beep Off function is “on” and “off”, the display indicates briefly “**BEEP OFF**” and “**BEEP ON**”.

WHISPER

Press, (or press and hold), the assigned **PF** key to increase the microphone gain; allowing the operator to speak in a low voice (whisper) temporarily when transmitting. Press again, (or press and hold again), the assigned **PF** key to resume normal microphone gain.

When the Whisper function is “on” and “off”, the display indicates “**WHISP ON**” and “**WHISP OF**” briefly.

VOX (REQUIRES VOX COMPATIBLE HEADSET)

Press, (or press and hold), the assigned **PF** key to activate the VOX function; allowing hands-free, automatic activation of the transmitter, initiated by voice input into the microphone. You may disable the VOX function temporarily by pressing the **PTT** switch.

Press again, (or press and hold again), the assigned **PF** key to resume normal operation.

Note 1: when the VOX function is activated by operation from the external equipment, a small dot (“•”) will be indicated at the bottom right of the display (see page 11 of this manual).

Note 2: when the VOX function is “on” and “off”, the display indicates “**VOX ON**” and “**VOX OFF**” briefly.

ADVANCED OPERATION

VOX SET

You can manually adjust the VOX Gain using this function:

- ❑ Press, (or press and hold), the assigned **PF** key. A tone will sound, and the current VOX Gain level will appear on the display.
- ❑ Press the **[A]/[B]** button to select the desired VOX Gain level.
- ❑ Press the **[D]** key to store the new setting. The display indicates “- **SAVED** -” briefly, then reverts to the normal channel indication.

You may cancel the new setting by pressing the **[C]** key. In this case, the display indicates “- **CANCEL** -” briefly.

VOX ANTI-TRIP

Press, (or press and hold), the assigned **PF** key to toggle the VOX Anti-Trip feature “On” and “Off”.

When the VOX Anti-Trip feature is set to “On”, the transceiver does not activate a VOX transmission from picking up receive audio or from a radio alert tone (beep sound).

When the VOX Anti-Trip feature is “on” and “off”, the display indicates “**ATRP ON**” and “**ATRP OFF**” briefly.

EMERGENCY

The **VX-264** includes an “Emergency” feature which may be useful for alerting another party monitoring on the same frequency as your transceiver’s channel.

Press and hold the assigned **PF** key for a pre-programmed period to initiate an emergency call on the pre-defined channel. The “- **EMG** -” indication will be indicated on the display. For further details contact your Motorola Solutions dealer.

To revive the radio from the Emergency mode, just press and hold again the assigned **PF** key or turn off the radio.

LONE WORKER

Press, (or press and hold), the assigned **PF** key to activate the Lone Worker feature. The Lone Worker feature is designed to emit an alarm for 30 seconds when the Lone Worker Timer (programmed by your Motorola Solutions dealer) has expired.

Press again, (or press and hold again), the assigned **PF** key, the Lone Worker feature is disabled. If the user does not reset the timer by pressing the **PTT** switch, the radio switches to Emergency mode.

When the Lone Worker feature is activated, a small dot (“•”) will be indicated at the bottom left of the display.

ADVANCED OPERATION

GROUP Up/DOWN

Press, (or press and hold), the assigned **PF** key to select a different group of channels. A group number will appear at the upper right corner and a group name will appear briefly on the display.

CHANNEL Up/DOWN

Press, (or press and hold), the assigned **PF** key to select a different channel. A channel name will appear on the display.

PRI

Press, (or press and hold), the assigned **PF** key to recall the pre-programmed Priority Channel of the current group by your Motorola Solutions dealer directly. When Priority Channel is recalled, the “**P**” icon will appear on the display.

SCAN

The Scanning feature is used to monitor multiple channels programmed into the transceiver. When scanning, the transceiver will check each channel for the presence of a signal and will stop on a channel if a signal is present.

To activate scanning:

- Press, (or press and hold), the assigned **PF** key to activate scan mode.
- The scanner will search the channels of the pre-programmed scan list, looking an active channel. The radio will pause each time it finds a channel on which someone is speaking.
- Press again, (or press and hold again), the assigned **PF** key to disable scanning and receive the channel which was chosen when pressed the **PF** key.

Note: Your dealer may have programmed your radio to stay on one of the following channels if you press the **PTT** switch during scanning pause:

- “Scan Pause” channel (“Talk Back”)
- “Last Busy” channel
- “Priority” channel
- “User Programmed” channel (“Select Channel”)
- The channel which defined in the **CH** Selector knob (“Channel Position”).

ADVANCED OPERATION

GROUP SCAN

Group Scan monitors channels in multiple groups, compared to the scan feature, which monitors channels in a single or current group. When scanning, the transceiver will check each channel of the programmed group for the presence of the signal and will stop on a channel if a signal is present.

Press, (or press and hold), the assigned **PF** key to activate group scan for the pre-programmed groups.

Press again, (or press and hold again), the assigned **PF** key to disable group scan mode and receive the channel which was chosen when pressed the **PF** key.

When the Group Scan is activated, the display indicates “**GRP SCAN**”.

GROUP SCAN SET

You may wish to have the Scanner pass through more than one Group during the scanning process (normally, scanning is performed within the current group only).

To include the current Group in the scanning loop, press, (or press and hold), the assigned **PF** key: a small dot (“•”) will appear at the bottom of the display (See page 11 of this manual).

To remove a current Group from Group Scan, press, (or press and hold), the assigned **PF** key again: a small dot (“•”) will disappear from the display.

DUAL WATCH

The Dual Watch feature is similar to the SCAN feature, except that only two channels are monitored:

- The current operating channel
- The Priority channel.

To activate Dual Watch:

- Press, (or press and hold), the assigned **PF** key to activate the Dual Watch feature.
- The scanner will search the two channels and pause when it finds a transmission on either channel.
When the Dual Watch feature is activated, the “**DW**” icon will be indicated on the display (See page 11 of this manual).

To stop Dual Watch:

- Press, (or press and hold), the assigned **PF** key to disable the Dual Watch feature.
The radio reverts back to the original channel being monitored before the dual watch feature was initiated.

ADVANCED OPERATION

FOLLOW ME SCAN

The Follow Me Scan feature checks a user-assigned priority channel in addition to the channels previously pre-programmed into a radio's scan list. For example, if only Channels 1, 3, and 5 (of the 8 available channels) are designated for "Scanning", the user may assign Channel 2 as the "user-assigned" priority channel via the Follow Me Scan.

To activate Follow Me Scan, first select the channel you want to designate as the "user-assigned priority channel" by positioning the **CH** Selector knob on the desired "priority" channel. Next, press, (or press and hold), the assigned **PF** key (the display will indicate "**FM SCAN**" briefly). Finally, rotate the **CH** Selector knob to the desired "operating channel".

The scanner will search the two channels (user-assigned priority channel and operating channel) and pause when it finds a transmission on either channel.

SCAN SET

Press, (or press and hold), the assigned **PF** key to add/delete the current channel to/from your scanning list.

To store a particular channel to your scanning list, press, (or press and hold), the assigned **PF** key. If you delete a channel from your scanning list, press, (or press and hold), the assigned **PF** key again.

When the scanner is paused, you may remove the channel from the scan list temporarily by pressing, (or press and holding), the same key.

Note 1: when store a particular channel to your scanning list, the display indicates "**SCN SET**" briefly and "ⓘ" icon will appear on the display.

Note 2: when delete a channel from your scanning list, the display indicates "**SCN SKIP**" briefly and the "ⓘ" icon will disappear from the display.

ADVANCED OPERATION

TA (TALK AROUND) SCAN

Press, (or press and hold), the assigned **PF** key to toggle the TA Scan feature “On” and “Off”.

When operating on a duplex channel system (for example, a repeater station), TA Scan allows the transceiver to search both transmit and receive frequencies on your duplex system.

When a signal is encountered on the receive frequency, the transceiver will pause until the signal disappears. When a signal is encountered on the transmit frequency, the transceiver will check for activity on the receive frequency every few seconds (interval programmed by your Motorola Solutions dealer).

When the TA Scan feature is activated, the “” icon will blink on the display (See page 11 in this manual).

Note: The TA Scan feature does not activate on a Simplex Channel.

TALK AROUND

Press, (or press and hold), the assigned **PF** key to activate the Talk Around feature when you are operating on duplex channel systems (separate receive and transmit frequencies, utilizing a “repeater” station). The Talk Around feature allows you to bypass the repeater station and talk directly to a station that is nearby. This feature has no ef-

fect when you are operating on “simplex” channels, where the receive and transmit frequencies are already the same.

When the Talk Around feature is activated, the “” icon will be indicated on the display (See page 11 in this manual).

Note that your dealer may have mode provision for “Talk Around” channels by programming “repeater” and “Talk Around” frequencies on two adjacent channels. If so, the key may be used for one of the other Pre-Programmed Functions.

Note: The Talk Around feature does not activate on a Simplex Channel.

RESET

Press (or press and hold) the assigned **PF** key to reset the RFC (Ready for Communication) condition.

CALL 1 TO CALL 3

Press, (or press and hold), the assigned **PF** key to send a pre-programmed 5-Tone or MDC1200® call signal.

CODE UP/DOWN

Press, (or press and hold), the assigned **PF** key to select a 2-Tone or 5-Tone encode code from the pre-programmed encode list.

ADVANCED OPERATION

CODE SET

You can change the desired digit of the 5-Tone encode code using this function:

- Press, (or press and hold), the assigned **PF** key.
- Set the desired 5-Tone encode code from the **[A]/[B]** keys (select the code number) and **SIDE-1/SIDE-2** buttons (select the code digit).
- Press the **[D]** key to store the new setting. The display indicates “- **SAVED** -” briefly, then reverts to the normal channel indication.

You may cancel the new setting by pressing the **[C]** key. In this case, the display indicates “- **CANCEL** -” briefly.

SPEED DIAL

Your Motorola Solutions dealer may have pre-programmed Auto-Dial telephone number memories into your radio.

To dial a number:

Press, (or press and hold), the assigned **PF** key, then press the **SIDE-1/SIDE-2** buttons (or **[A]/[B]** keys) to select the Auto-Dial memory name which recorded the dial number you wish. Press the **PTT** switch to send a pre-defined DTMF tone. The DTMF tones sent during the dialing sequence will be heard in the speaker.

CALL

The Call feature is different for each type of the signaling system.

When using the 2-Tone Signaling System

Press, (or press and hold), the assigned **PF** key to send a pre-programmed 2-Tone encode code.

When using the MDC1200® Signaling System

- Press, (or press and hold), the assigned **PF** key to enter the “Call Menu” mode.
- Press the **SIDE-1/SIDE-2** buttons (or **[A]/[B]** keys) to select the desired Call mode. Available Call modes are:
 - CALL ALT:** You may transmit the call alert to the desired station.
 - SEL CALL:** You may call the desired station individually.
 - RADIO CK:** You may check the status of the desired station.

- Press the **[D]** key to accept the selection. (You may cancel the selection by pressing the **[C]** key).
- Press the **SIDE-1/SIDE-2** buttons (or **[A]/[B]** keys) to select the station to be called.

Note: You may enter the station’s ID number (four digits) directly from the keypad (**[0]** - **[9]**, **[A]** - **[D]**, **[#]**: substitute for “E”, and **[*]**: wild card).

- Press the **PTT** switch to send an MDC1200® call.

ADVANCED OPERATION

DUTY

Press, (or press and hold), the assigned **PF** key to toggle the Duty function of the 2-Tone, 5-Tone, or MDC1200® “On” and “Off”.

When the Duty function is set to “On”, the display indicates “**Duty ON**” briefly and the user will always hear (depending on the sub-audio signaling) all traffic on the paging channel. The radio will sound the paging alert when it receives the programmed 2-Tone, 5-Tone, or MDC1200®.

When the Duty function is set to “Off”, the display indicates “**Duty OFF**” briefly and the user will NOT hear normal radio traffic on the paging channel. The radio will sound the paging alert and unmute only when it receives the programmed 2-Tone, 5-Tone, or MDC1200®.

TX SAVE DISABLE

The Transmit Battery Saver helps extend battery life by reducing transmit power when a very strong signal from an apparently nearby station is being received. Caution is advised when using this feature, as your transmission power could degrade the audio heard by the receiving radios in your communication path.

Press, (or press and hold), the assigned **PF** key to disable the Transmit Battery Saver, if you are operating in a location where high power is almost always needed.

Press again, (or press and hold again), the assigned **PF** key, the Transmit Battery Saver activates to reduce the transmit power when a very strong signal from an apparently nearby station is being received.

When the Transmit Battery Saver is “on” and “off”, the display indicates “**TX SA ON**” and “**TX SA OFF**” briefly.

LOCK

Press (or press and hold) the assigned **PF** key to lock the **CH** Selector knob, Programmable keys, and **PTT** switch.

LOCK

In order to prevent accidental channel change or inadvertent transmission, various aspects of the **CH** Selector knob, Programmable keys, and **PTT** switch may be locked. The precise lockout configuration is programmed by your Dealer.

To activate the key locking, turn the radio off. Then, press and hold the **PTT** and **SIDE-2** key while turning the radio on again.

To cancel the key locking, repeat this process.

ARTS™ (AUTO RANGE TRANSPOND SYSTEM)

This system is designed to inform the operator when you and another ARTS™-equipped transceivers and stations are within communication range using the DCS Encoder/Decoder.

During ARTS™ operation, when the radio receives an incoming ARTS™ signal, a short beep will sound and “**IN SERV**” (“In Service”) will be indicated on the display for 2 seconds. If you move out of range for more than two minutes, your radio senses that no signal has been received; a short triple-beep will sound and “**OUT SERV**” (“Out of Service”) will be indicated on the display for 2 seconds. If you move back into communication range, as soon as the other station transmits, a short beep will sound again and “**IN SERV**” (“In Service”) will be indicated again on the display for 2 seconds.

OPTIONAL ACCESSORIES

FNB-V133LI-UNI	7.4V DC  , 1380 mAh Li-Ion Battery Pack	ATV-8A	VHF Antenna (134-151 MHz)
FNB-V134LI-UNI	7.4V DC  , 2300 mAh Li-Ion Battery Pack	ATV-8B	VHF Antenna (150-163 MHz)
CD-58	Desktop Charger	ATV-8C	VHF Antenna (161-174 MHz)
PA-55	AC Adapter for CD-58	ATV-6XL	VHF Antenna (Untuned)
VAC-UNI	Desktop Charger (CD-58 + PA-55)	ATU-6A	UHF Antenna (400-430 MHz)
VAC-6058	Multi-Unit Charger	ATU-6B	UHF Antenna (420-450 MHz)
MH-100	Receive Only Earpiece (for MH-45B4B/-360S/-450S)	ATU-6C	UHF Antenna (440-470 MHz)
MH-101A4B	1 Wire Surveillance Kit	ATU-6D	UHF Antenna (450-490 MHz)
MH-102A4B	2 Wire Surveillance Kit	ATU-6F	UHF Antenna (490-520 MHz)
MH-360S	Compact Speaker Microphone	CN-3	Antenna Adapter
MH-450S	Speaker Microphone	CLIP-20	Belt Clip
MH-45B4B	Noise Cancelling Speaker Microphone	CE150	PC Programming Software
MH-37A4B-1	Earpiece Microphone	FIF-12	USB Programming Interface
VH-150A	Behind Type VOX Compatible Microphone	CT-106	Connection Cable for FIF-12
VH-150B	Over the Head VOX Compatible Microphone	CT-27	Radio to Radio Cloning Cable
VCM-5	Vehicular Charger Mounting Adapter for CD-58		

Availability of accessories may vary; some accessories are supplied standard per local requirements, others may be unavailable in some regions. Check with your Motorola Solutions Dealer for changes to this list.

WARRANTY POLICY

Motorola Solutions warrants, to the original purchaser only, its Motorola Solutions manufactured communications products against defects in materials and workmanship under normal use and service for a given period of time from the date of purchase.

Limited Warranty Details:

Contact the authorized Motorola Solutions distributor in your country.

DISPOSAL OF YOUR ELECTRONIC AND ELECTRIC EQUIPMENT

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste by products.

In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.



Part 15.21: Changes or modifications to this device not expressly approved by Motorola Solutions could void the user's authorization to operate this device.



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