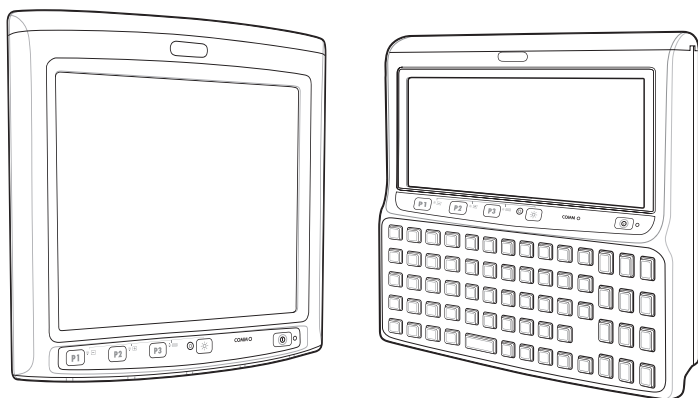


# VC5090 Vehicle Computer

## Quick Reference Guide



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Zebra Technologies Corporation  
Lincolnshire, IL U.S.A.  
<http://www.zebra.com>

## Warranty

Subject to the terms of Zebra's hardware warranty statement, the VC5090 Vehicle Computer products are warranted against defects in workmanship and materials for a period of one year from the date of shipment. For the complete Zebra hardware product warranty statement, go to: <http://www.zebra.com/warranty>.

## Introduction

The VC5090 Vehicle Computer is a vehicle or fixed-mount computer consisting of two configurations: a full-screen computer with optional keyboard and a half screen configuration with a integrated keyboard. You can enter data using the touch screen, the keyboard, an optional bar code scanner, or a combination of the three. The data is transmitted wirelessly to a host computer. The vehicle computer features:

- Ergonomic design with color LCD touch screen
- Internal wide-range power supply (10 - 72 VDC) to accommodate propane, gasoline, and electric-powered forklifts
- Internal antennas with external antenna port
- Interfaces with scanners, printers, audio devices and other peripherals
- Continuous operation at -30 °C (-22 °F)
- Optional touch screen heater for freezer applications
- Pre-loaded with terminal emulation software.

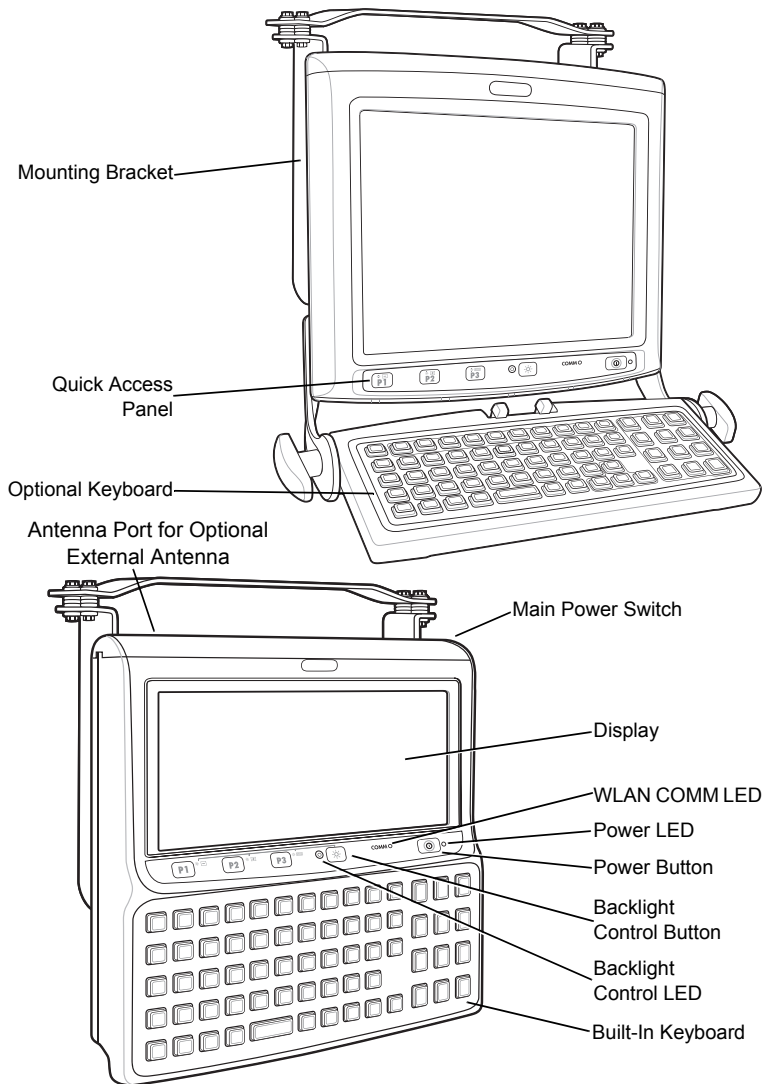
## About This Guide

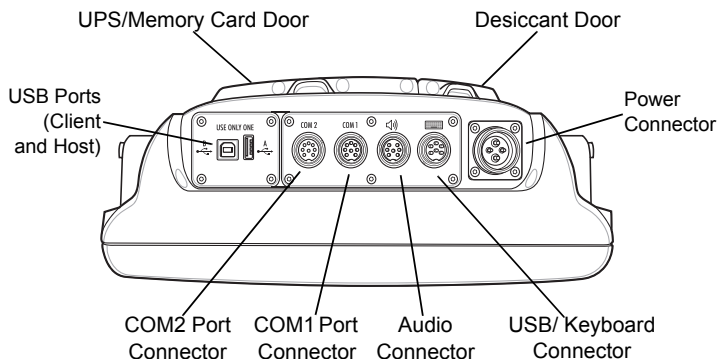
This guide contains the following:

- *Features on page 4*
- *Unpacking on page 5*
- *Optional Accessories on page 5*
- *Installation on page 6*
- *Powering the VC5090 On/Off on page 21*
- *Connecting Accessories on page 24*
- *Maintenance on page 25*
- *Troubleshooting on page 25*
- *Regulatory Information on page 27.*

For more information including installation instructions, refer to the VC5090 Product Reference Guide, p/n 72E-76347-xx available at <http://www.zebra.com/support>.

## Features





## Unpacking

The following items are contained in the box:

- VC5090 vehicle computer
- mounting bracket with hardware kit
- spare desiccant kit
- power cable with fuse kit
- this guide.

✓ **NOTE** The hardware kit contains items that might not be used during installation. Keep the hardware kit in a safe place for future use.

## Optional Accessories

- Heated keyboard with bracket assembly
- Scanners and scanner cables
- Headset/Handset
- Vehicle Motion Detector cable
- Printer cables
- Adjustable handles (locking knobs)
- RS-232 and USB ActiveSync cables
- Replacement power cables (straight and right angle)
- AC power supply and power cable
- Uninterruptable power supply (UPS) battery

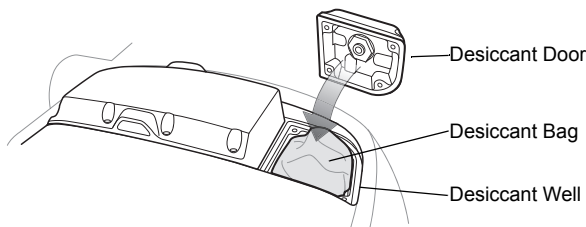
- Replacement desiccant bag kit
- Protective keyboard cover
- Replacement screen protector.

## Installation

### Installing the Desiccant Door

- ✓ **NOTE** Zebra recommends installing the desiccant bag in environments where extreme temperature changes occur, such as applications where the device may be continuously moved between a freezer and a hot/humid area. Temperature changes would occur more often in the hot/humid months of summer and less frequently in cold/dry months of winter. If desiccant is not used, the desiccant door must still be installed and secured.

1. The VC5090 ships with a desiccant bag installed and a replacement bag in the VC5090 shipping container. The installer may wish to replace the desiccant in the VC5090 with the new bag prior to installing the VC5090 on the vehicle, as transit and storage may have saturated the desiccant.
2. Open the desiccant package and remove the desiccant bag.
3. Fold the four corners of the bag under to form a pillow.
4. Place the desiccant bag in the desiccant well.



5. Ensure that the door seal is in place.
6. Carefully place the desiccant door onto the back housing. Ensure that the desiccant bag does not interfere with door seal.



**CAUTION** Be sure to torque the screws to seal the device properly. Otherwise, sealing can be compromised.

7. Secure the door to the back housing using the four screws. Torque to  $9 \pm 0.5$  kgf.cm ( $7.8 \pm 0.4$  in-lbs).

## Installing the Optional UPS

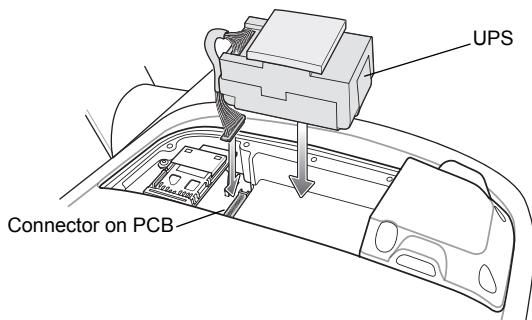
- ✓ **NOTE** The use of the optional UPS battery is recommended in every case the power to the VC5090 can be unintentionally interrupted during operation.

It is strongly recommended when AC power source susceptible to power failures is used to power the VC5090.

To install the optional UPS:

- ⚠ **CAUTION** Use ESD precautions when installing the UPS.

1. Place the Main Power switch on top of the vehicle computer to the off position.
2. Remove and discard the eight screws securing the UPS/Memory Card door on the back of the vehicle computer.
3. Connect the UPS cable connectors to the connector on the printed circuit board (PCB) and on the UPS.



4. Place the UPS into the well.
5. Place the UPS/Memory Card door over the UPS and secure using the eight new screws supplied with the UPS kit.

- ⚠ **CAUTION** Be sure to torque the screws to seal the device properly. Otherwise, sealing can be compromised.

6. Torque the screws to 9 +/- 0.5 kgf.cm ( $7.8 \pm 0.4$  in-lbs).
7. Place the Main Power switch to the on position.

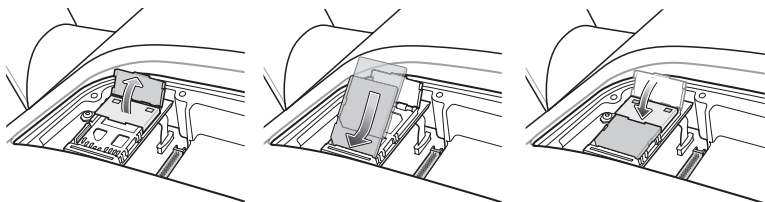
It takes four hours to fully charge the UPS.

## Installing a Memory Card

A memory card (Secure Digital) provides secondary non-volatile storage. The card holder is located on the back of the VC5090 under the UPS/Memory Card door.

To install the memory card:

1. Place the Main Power switch on the top of the vehicle computer to the off position.
2. Remove and discard the eight screws securing the UPS/Memory Card door.
3. Lift the card holder retaining door.



4. Position the memory card, with the contacts down, into the card holder. The memory card corner notch fits into the holder only one way.
5. Snap the retaining door closed.
6. Replace the UPS/Memory Card door and secure using eight new screws.



**CAUTION** Ensure to torque the screws to seal the device properly. Otherwise, sealing can be compromised.

7. Torque the screws to 9 +/- 0.5 kgf.cm ( $7.8 \pm 0.4$  in-lbs).
8. Place the Main Power switch to the on position.



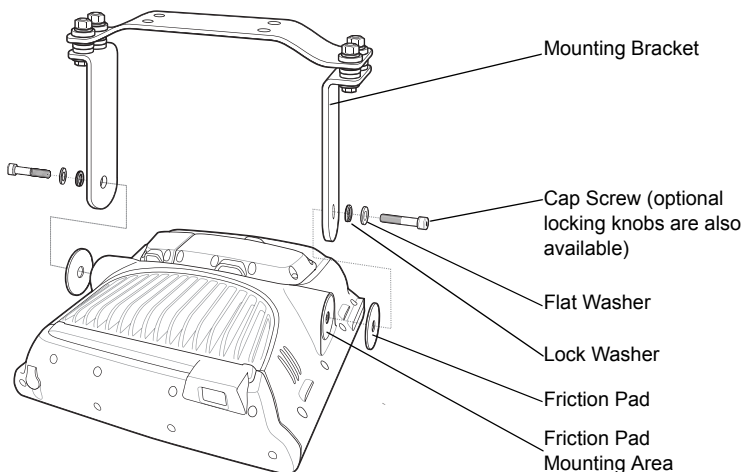
## Mounting Bracket Installation

✓ **NOTE** The vehicle computer and bracket must be firmly secured to a surface that can support the vehicle computer's weight.

⚠ **CAUTION** Zebra requires that the supplied mounting bracket be used when mounting the vehicle computer. An alternate RAM Mount mounting bracket is also available.

Assemble the mounting bracket onto the vehicle computer as shown below.

Torque cap screws to  $276 \pm 8.7$  kgf.cm ( $239.6 \pm 7.6$  in-lbs).



## Installing the VC5090 in a Forklift

⚠ **CAUTION** A qualified engineer must perform the installation in a vehicle. Improper installation can injure the operator or damage the vehicle and/or VC5090.

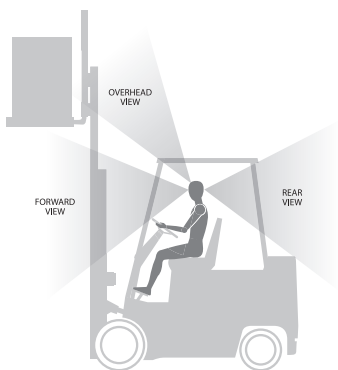
Follow the instructions below to properly install the VC5090 in a forklift.

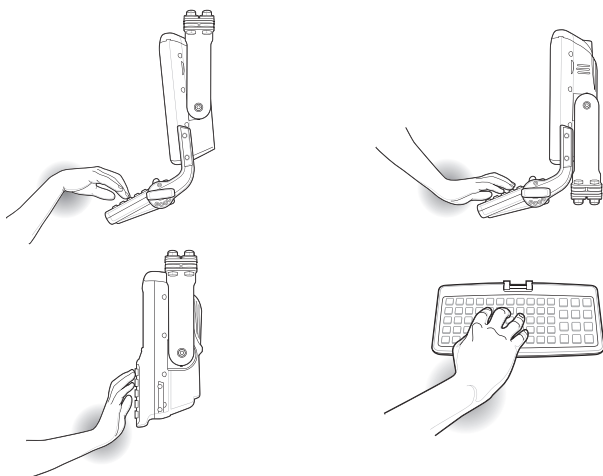
- Determine the best location for mounting the vehicle computer taking into consideration the driver's field of view and ease of accessing the vehicle computer.

- Install the appropriate mounting hardware. The VC5090 ships with four cap screws (3/8" - 16 - 2") for securing the mounting bracket. If the supplied cap screws are not long enough, use 3/8" - 16 - X stainless steel cap screws where X represents the length in inches of the required cap screws.
- Connect the vehicle computer to the vehicle's wiring system.

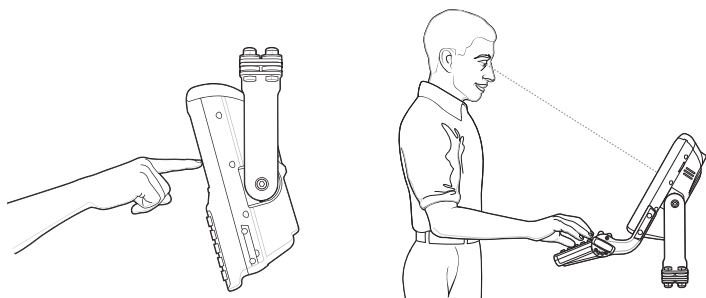
### ***Positioning the Vehicle Computer***

- Position the vehicle computer to ensure proper ventilation around the device.
- Determine the best position for the vehicle computer and all the associated components. If a similar vehicle computer was previously installed, check to see if the position it used is suitable for the VC5090.
- Test the installation for at least 30 minutes before installing on another vehicle:
  - Check that the position of the vehicle computer does not adversely obstruct vehicle controls.
  - Check that the vehicle computer does not adversely obstruct the driver's view.
  - Check the position of the vehicle computer for user comfort over long periods.
  - Check positioning to avoid extreme wrist angles that may cause injury.





**Avoid Extreme Wrist Angles**



**Optimum Wrist Position**

## ***Mounting the Vehicle Computer***

Forklifts tend to generate very large shock and vibration pulses due to the hydraulics and the lack of suspension coupled with (usually) very hard wheels.

The mounting bracket provided with the VC5090 is designed as an isolator. In order for it to be effective, the bracket base must be securely mounted to a rigid and strong structure that fully supports the entire base of the bracket.

Most forklifts have a very rigid and durable chassis and outer body panels but top facing surfaces may be sheet metal or plastic. These thin sheet metal or plastic surfaces are not suitable for mounting surfaces due to their non-rigid nature.

### ***Important Fixing Information***



**CAUTION** Any modification to supplied mounting bracket could cause failure of the unit and/or mountings.

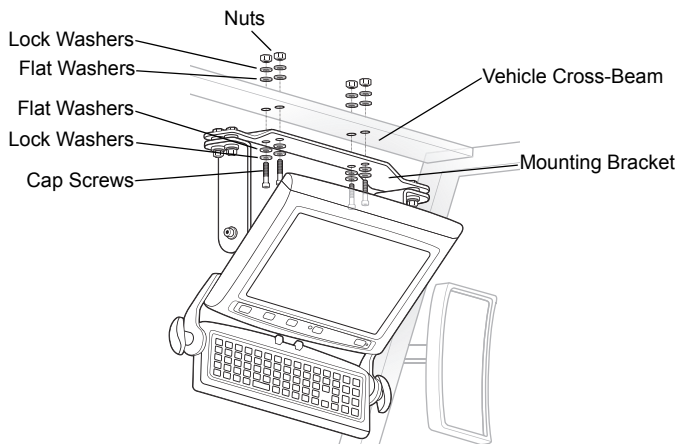
- Mounting surface must be flat and stiff and it must extend evenly for the entire length of the mounting bracket surface.
- All four mounting holes must be used.
- All nuts and bolts must be checked periodically and tightened if required.
- When installing the vehicle computer, care must be taken to ensure that the mounting bracket footprint is fully supported. Additional plates may be required to achieve this.

### ***Mounting Bracket Template***

Refer to the *VC5090 Product Reference Guide* for mounting template.

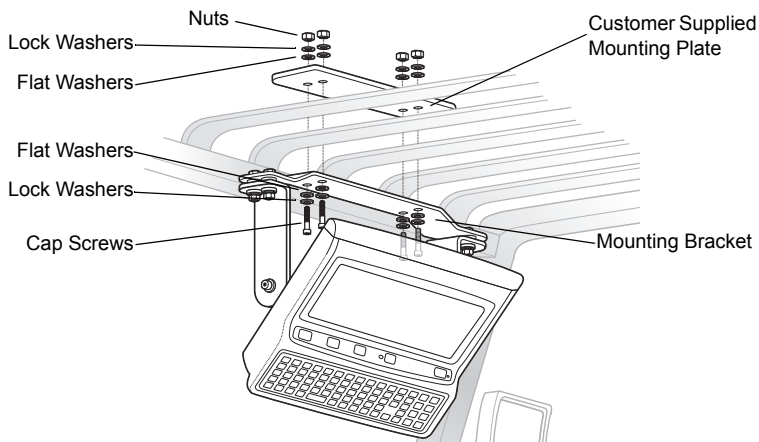
### ***Mounting onto an Over-Head Cross-Beam Example***

The diagram below illustrates a typical installation where the vehicle computer is mounted onto a cross-beam.

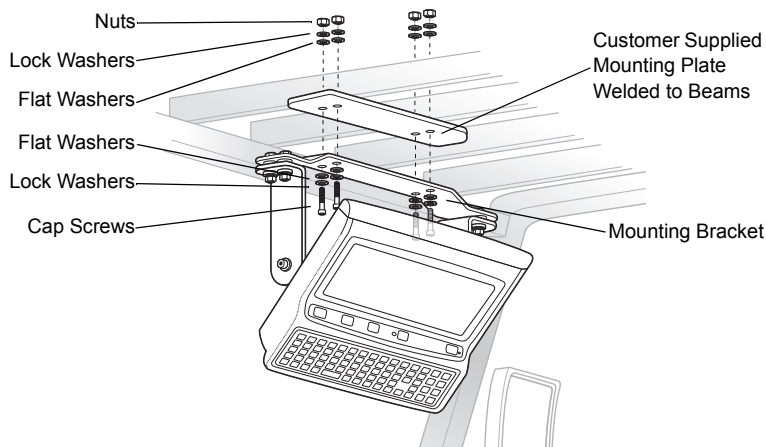


### ***Mounting onto an Over-Head Cage Example***

The diagrams below illustrates a typical installation where the vehicle computer is mounted on an overhead cage. A customer supplied mounting plate must be used that can withstand the weight of the vehicle computer under vibration and shock. The plate must be made of stainless steel or hardened steel with the following dimensions: 3.0 in. (76.0 mm) wide, 8.66 in. (220.0 mm) long and 0.2 in. (5.0 mm) thick. The mounting plate must be secured with hardware or to the underside of the cage by welding.




Mounting on Flat Overhead Beams

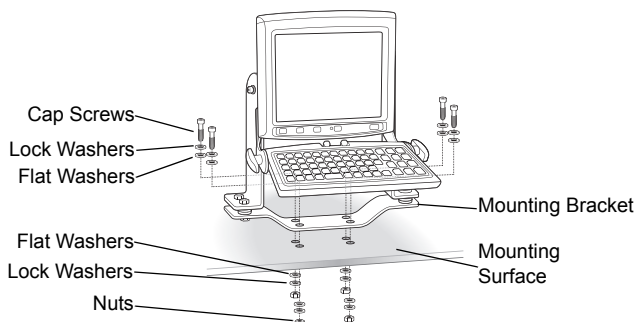


Mounting on Transverse Overhead Beams

### ***Mounting on a Dashboard or Horizontal Surface Example***

The diagram below illustrates a typical installation where the vehicle computer is mounted on a dashboard or horizontal flat surface.

 **CAUTION** If mounting to a thin surface, a reinforcing plate is required.



### ***Routing Electrical Cables***

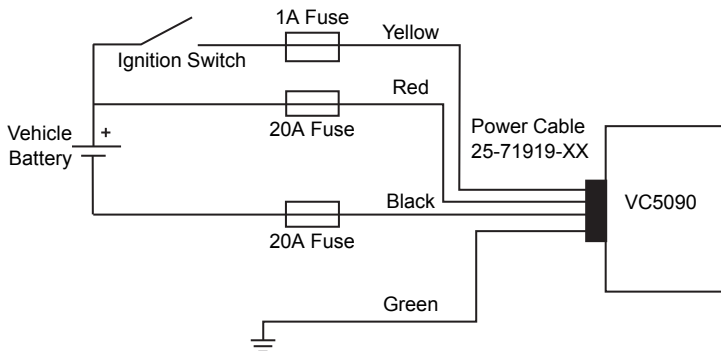
- Establish a neat route for the cable, staying clear of moving parts or hot surfaces whenever possible.
- Fix the cable to existing cable runs inside the vehicle using cable ties, but make sure they are away from any moving or hot surfaces.
- When the cabling must go through a panel, use a suitable gland.
- When fixing the conduit or cable on the outside of a vehicle, use P-Clips. Either drill and tap the hole or use a nut and bolt to secure the clip.
- Ensure the cable does not have tight bends. The minimum recommended radius is 2.5". Do not allow the power cable to bend against mounting hardware. Use the optional right angled DC power cable.
- Ensure cables do not swing or chafe on the structure. This often requires using cable ties approximately every foot, and ensuring the cables do not flex often, especially where they connect to the VC5090. However, if you must re-position the VC5090 occasionally, ensure

there is enough slack in the cable to accommodate movement without putting tension on the cable.

- DO NOT wind a cable in and out of the mesh on a cage.
- On electric vehicles, take the power from as close to the battery as possible, but not directly from the battery terminals, and not before any main fuse.
- On gasoline, diesel or propane vehicles, take the power from as close to the battery terminals as possible, and avoid using existing wiring.
- Ensure that all fuses are as close as possible to the power source.

### ***Gasoline, Diesel, or Propane Forklifts***

- All power wiring must use the supplied power cable.
- Fuses:
  - two 3AG, 20A, 250V, SLO BLO fuses
  - one 3AG, 1A, 250V, SLO BLO fuse.
- Keep the path between the battery and the vehicle computer as short as possible, and away from any part of the ignition high tension system.



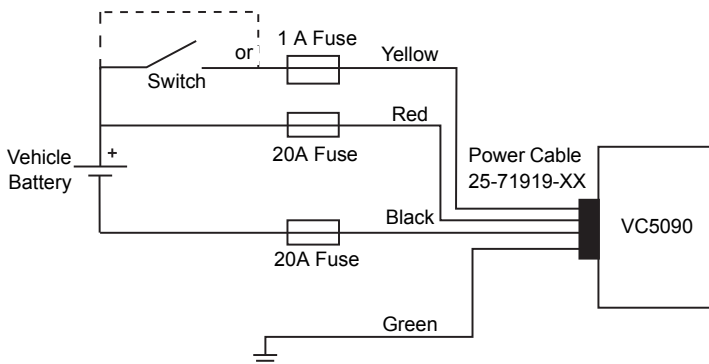
### ***Electric Forklifts***



**NOTE** This VC5090 is supplied with a power cable and does not require an external DC power filter. However, it can also be used with the filtered power cable (25-71919-04R).



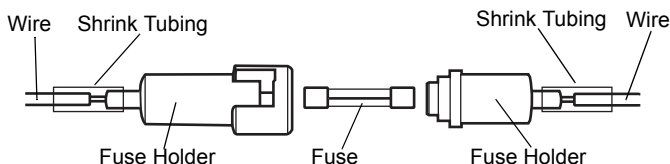
- All power wiring must use the supplied power cable.
- Fuses:
  - two 3AG, 20A, 250V, SLO BLO fuses
  - one 3AG, 1A, 250V, SLO BLO fuse.



## Connecting the Power Cable

✓ **NOTE** See the vehicle Owner's Manual for specific wiring information.

1. Disconnect the vehicle battery.
2. Connect the green wire to the vehicle's chassis.
3. Place a fuse and fuse holder in-line of the red, black and yellow wires approximately four inches from the cable end, as shown below.



4. Slide shrink tubing over wires.
5. Strip the wires (0.4 in./10 mm) and insert into the fuse holder. Crimp fuse holder ends to ensure a proper electrical connection (use Thomas & Betts WT-11-M crimp tool or equivalent).


6. Heat shrink tubing.
7. Connect the red wire to the vehicle's positive power source. Connect the black wire to the vehicle's negative power source.

✓ **NOTE** The vehicle computer contains an Ignition Sense feature that detects when the ignition switch is turned off. This allows the device to draw power for a preset amount of time to allow proper shutdown of applications then removes power so that it will not drain the vehicle's battery.

8. Connect the yellow wire to the vehicle's ignition switch. If you do not plan on using the Ignition Sense feature, connect the yellow wire to the vehicle's positive power source.
9. Ensure the wiring connections created are sufficiently insulated from each other.
10. Re-connect the vehicle battery.
11. Insert the power cable connector into the vehicle computer's Power port. Align the keyway on the power connector with the notch on the vehicle computer's power port.

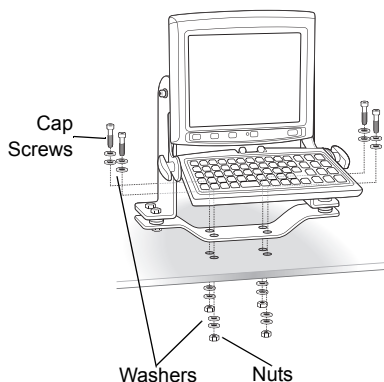
## Installing the VC5090 on a Desktop

To mount the vehicle computer on a desktop:

 **CAUTION** If mounting to a thin surface such as drywall or plywood, a reinforcing plate is required.

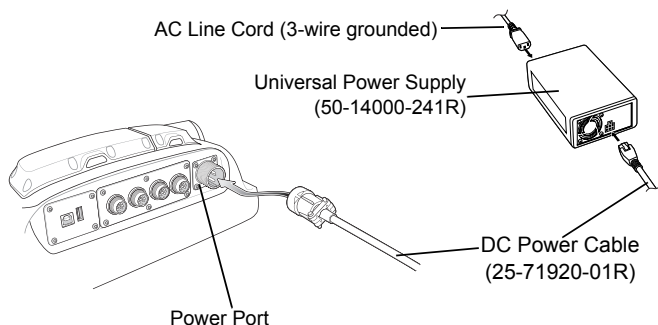
1. Install the mounting bracket to the desktop using four cap screws, eight washers and four nuts.

✓ **NOTE** The VC5090 ships with four cap screws (3/8" - 16 - 2") for securing the mounting bracket. If the supplied cap screws are not long enough, use 3/8" - 16 - X stainless steel cap screws where X represents the length in inches of the required cap screws.



2. Insert the DC power cable into the DC connector on the universal power supply.
3. Plug the other end of the cable into the vehicle computer's power port.
4. Insert the AC line cord into the AC connector on the universal power supply.

✓ **NOTE** When using the optional AC power supply, the vehicle computer operating temperature range is 50°F to 104°F (10°C to 40°C).



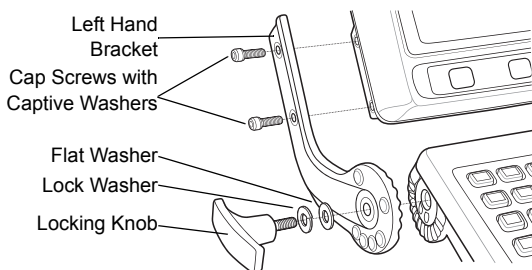
5. Plug the other end of the AC power cable into a wall outlet.

## Installing the Optional Keyboard

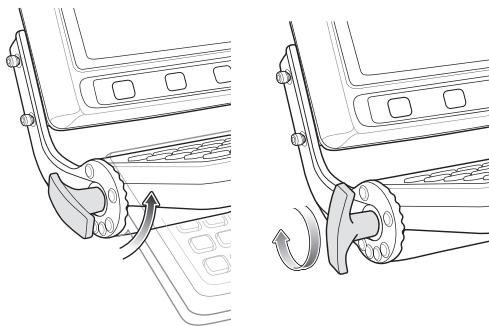
- ✓ **NOTE** The optional keyboard is only available for the full-screen configuration.

The keyboard kit contains the following items:

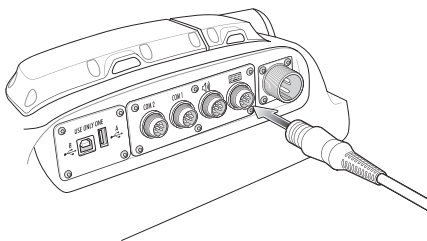
- keyboard
  - two keyboard brackets
  - four caps screws with captive washers
  - two locking knobs, two flat washers and two lock washers.
1. Attach the keyboard brackets to both sides of the VC5090, using the cap screws with captive washers. Only tighten the cap screws three turns.



2. Insert the keyboard locking knobs through the washers and brackets and screw into the keyboard. Tighten fully to lock into place.
3. Torque the bracket cap screws to 230 kgf/cm (200 in-lbs).
4. To adjust keyboard position, loosen the right and left locking knobs two full turns and rotate the keyboard to the desired position. The keyboard snaps into possible positions as it is rotated.



5. Tighten the keyboard locking knobs to secure the keyboard into position.
6. Plug the keyboard cable into the USB/Keyboard connector and carefully screw the locking barrel until hand tight. Ensure that you do not cross-thread the barrel.

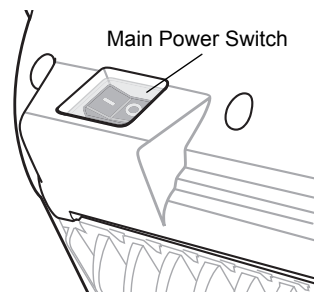


## Powering the VC5090 On/Off

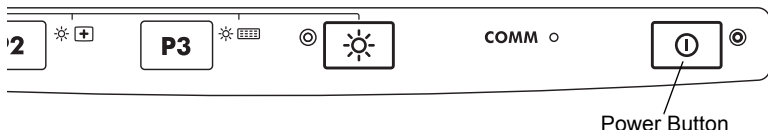
- ✓ **NOTE** Only use the Main Power switch when removing power completely from the VC5090. All data stored in RAM is lost.

To power on, place the Main Power switch on the top of the VC5090 to the on ( | ) position.

To power off, place the Main Power switch on the top of the VC5090 to the off ( O ) position.



Use the Power button on the Quick Access Panel to place the VC5090 into Suspend mode or wake the VC5090 from Suspend mode.



This is usually enough to conserve battery power while the VC5090 is idle during off time in normal operation.

Switch off the Main Power switch after the VC5090 is already in Suspend mode only when removing power completely from the VC5090. All data stored in RAM is lost.

✓ **NOTE** Always place the VC5090 in Suspend mode prior to switching off the Main Power switch and removing power from the VC5090.

## Charging the Internal Backup Battery

After installing the VC5090, leave it powered on for 24 hours to fully charge the internal backup battery. Note that the VC5090 can charge the backup battery while in Suspend mode, but not if power is removed.

The internal battery maintains the RAM memory for 72 hours when fully charged. The data in the Flash memory or Flash file system is not affected by the state of charge.

## Calibrating the Touch Screen

The VC5090 prompts you to calibrate the touch screen when you first power on the VC5090 or after a cold-boot.

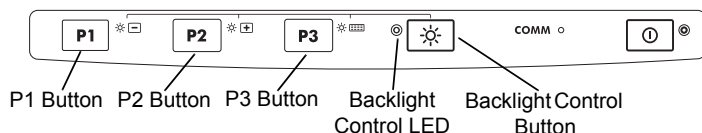


**CAUTION** Do not use sharp objects when touching the screen. Use your finger tip or a stylus when touching the screen.

1. Carefully touch and hold the center of each target. Repeat as the target moves around the screen.
2. Tap the screen to accept the settings when the calibration is complete.

## Controlling Screen Brightness

There are five levels of screen brightness. To adjust the brightness of the screen, press the Backlight Control button on the Quick Access Panel. The amber Backlight Control LED lights indicating that the VC5090 is in the backlight control mode. Press the P1 button to decrease the brightness or the P2 button to increase the brightness. Press the Backlight Control button to exit this mode (or after five seconds of inactivity the VC5090 automatically returns to normal operation).



## Controlling Keyboard Backlight

To toggle the keyboard backlight on and off, press the Backlight Control button on the Quick Access Panel. The amber Backlight Control LED lights indicating that the VC5090 is in the backlight control mode. Press the P3 button to toggle the keyboard backlit. Press the Backlight Control button to exit this mode (or after five seconds of inactivity the VC5090 automatically returns to normal operation).

## Resetting the Vehicle Computer

If the vehicle computer stops responding to inputs, perform a warm boot or cold boot.

## ***Performing a Warm Boot***

A warm boot restarts the vehicle computer and saves all stored records and entries.

✓ **NOTE** Files that remain open during a warm boot may not be retained.

To perform a warm boot, press the Power button and the P2 button simultaneously and release.

## ***Performing a Cold Boot***

A cold boot restarts the vehicle computer, but erases all stored records and entries in RAM. Data saved in flash memory or a memory card is not lost. In addition it returns formats, preferences and other settings to the factory default settings. There are two ways to perform a cold boot:

- Simultaneously press and hold the Power, P1 and P3 buttons.
- Turn off the Main Power switch on the top of the vehicle computer, press the Power, P1 and P3 buttons simultaneously then turn the Main Power switch to the on position.

## **Programmable Keys**

The programmable keys on the Quick Access Panel (P1, P2, P3) can be set to perform certain functions, such as switching between applications or emulator sessions.

To set a programmable key:

1. From the Start menu, select **Settings > Control Panel**.
2. Select the **Programmable Keys** icon.
3. In the **Key**: drop-down list, select the key to program.
4. In the **Action** drop-down list, select the function to assign to the key to perform.
5. Tap **OK**.

## **Connecting Accessories**

Connect an optional scanner, ActiveSync serial or USB cable, audio or USB device using the appropriate connector on the bottom of the VC5090. Cables are available from Zebra.



You may also use the USB port for ActiveSync connection, if the serial ports are used for another purpose. This cable is also available from Zebra. Refer to the *VC5090 Product Reference Guide* for information about additional accessories.

## Maintenance

The vehicle computer is factory-sealed (except for the desiccant door and UPS/Memory Card door) and contains no user-serviceable parts. Only qualified Service Centers should service the vehicle computer.

Use the protective caps that came with the vehicle computer to protect unused connectors.

- Clean the casing, keyboard, and display window by wiping with a soft cloth. Use a damp cloth if necessary.
- Never use solvents or abrasive cleaners. You may damage the display or keyboard.

## Desiccant Bag Replacement

Optional desiccant bags can be used in environments where extreme temperature changes occur. See [Installing the Desiccant Door on page 6](#) for installing the desiccant bags. Discard the original screws and replace the door using the screws that come with the new desiccant kit.

## Troubleshooting

Problem	Cause	Solution
VC5090 does not power on or shuts off suddenly.	Main Power switch on top of vehicle computer is in the off position.	Turn the Main Power switch to the on position.
	Power cable not connected or unplugged.	Connect power cable to power cable port on bottom of the vehicle computer. Press the Power button to wake up the VC5090.
	If VC5090 is powered by a vehicle battery, the vehicle battery is depleted.	Replace or charge the vehicle battery.
	The power cable ignition sense wire (yellow) is not connected properly.	Verify that the power cable is connected properly. See <a href="#">Routing Electrical Cables on page 15</a> .

Problem	Cause	Solution
Cannot see characters on display.	VC5090 not powered on.	Check that the Main Power switch on the top of the VC5090 is in the on position. Press the Power button.
	Screen is too bright or too dark.	Adjust the brightness; see <a href="#">Controlling Screen Brightness on page 23</a> .
	VC5090 is in Suspend mode (green Power LED is off)	Press the Power button to wake up the VC5090.
Application does not respond.	VC5090 is not communicating with the AP (Communication LED is off).	Bring the VC5090 closer to the AP. If problem continues, contact your System Administrator.
Optional scanner does not operate.	Scanner is not properly connected to the VC5090.	Connect the scanner to the COM1 port and power up the vehicle computer. If the problem continues, refer to the scanner Product Reference Guide or see your System Administrator.
	SerialWedge application is not enabled or set to the correct COM Port.	Ensure that the SerialWedge application is enabled and set to the correct port. See <i>VC5090 Product Reference Guide</i> for more information.

## Regulatory Information

All Zebra devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

This guide applies to model number: VC5090.

Regulatory Information is available in French, Italian, German, Spanish (Spain), Portuguese, Japanese, Korean, Russian, Simplified Chinese and Traditional Chinese. Please see following web site: <http://www.zebra.com/support> and look for your specific product.

Any changes or modifications to Zebra equipment, not expressly approved by Zebra, could void the user's authority to operate the equipment.

Antennas: Use only the supplied or an approved replacement antenna.

Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.



**CAUTION** Only use Zebra approved and UL Listed accessories, battery packs and battery chargers.

Do NOT attempt to charge damp/wet mobile computers or batteries. All components must be dry before connecting to an external power source.

## Products Equipped with Bluetooth<sup>®</sup> Wireless Technology

This product contains Bluetooth Complimentary Subsystems:

- BT ID:B01825
- BT ID:B02413

## Country Approvals

Regulatory markings are applied to the device signifying the radio(s) are approved for use in the following countries: United States, Canada, Australia, Japan, China and Europe <sup>1, 2</sup>.

Please refer to the Zebra Declaration of Conformity (DoC) for details of other country markings. This is available at <http://www.zebra.com/doc>.

Note 1: For 2.4GHz Products: Europe includes, Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Note 2: The use of 5GHz RLAN's has varying restrictions of use; please refer to the Zebra Declaration of Conformity (DoC) for details.



**CAUTION** Operation of the device without regulatory approval is illegal.

## Health and Safety Recommendations

### *Ergonomic Recommendations*



**CAUTION** In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

### *Warnings for Use of Wireless Devices*

Please observe all warning notices with regard to the usage of wireless devices.

### *Potentially Hazardous Atmospheres*

You are reminded of the need to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

## ***Hearing Aids***

The wireless device may interfere with some hearing aids. In the event of interference you may want to consult your hearing aid supplier to discuss solutions.

## ***Other Medical Devices***

Please consult your physician or the manufacturer of the medical device, to determine if the operation of your wireless product may interfere with the medical device.



## **FCC / EU RF Exposure Guidelines**

### ***Safety Information***

The device complies with Internationally recognized standards covering Specific Absorption Rate (SAR) related to human exposure to electromagnetic fields from radio devices.

### ***Reducing RF Exposure - Use Properly***

It is advisable to use the device only in the normal operating position.

### ***Remote and Standalone Antenna Configurations***

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

To satisfy FCC RF exposure requirements, a mobile transmitting device must operate with a minimum separation distance of 20 cm or more from a person's body.

## **Power Supply**

Use only an approved power supply 50-14000-241R output rated 12 VDC and minimum 9 A. The power supply is certified to EN60950-1 with SELV outputs. Use of alternative power supply will invalidate any approval given to this device and may be dangerous.

## **Batteries**

Please follow the local regulations when disposing of re-chargeable batteries.

## Taiwan - Recycling

EPA (Environmental Protection Administration) requires dry battery producing or importing firms in accordance with Article 15 of the Waste Disposal Act are required to indicate the recycling marks on the batteries used in sales, giveaway or promotion. Contact a qualified Taiwanese recycler for proper battery disposal.



「廢電池請回收」

## Wireless Devices - Countries

### *Country Roaming*

This device incorporates the International Roaming feature (IEEE802.11d) which will ensure the product operates on the correct channels for the particular country of use.

### *Ad-Hoc Operation*

Ad-Hoc operation is limited to Channels 36-48 (5150-5250 MHz). Use of this band is restricted to Indoor Use Only, any other use will make the operation of this device illegal.

## Radio Frequency Interference Requirements



Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

### ***Radio Transmitters (Part 15)***

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **Radio Frequency Interference Requirements - Canada**

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

### ***Radio Transmitters***

This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Label Marking: The Term "IC:" before the radio certification only signifies that Industry Canada technical specifications were met.

## **Marking and European Economic Area (EEA)**



The use of 2.4 GHz WLAN's, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 -2.4835 GHz

The use of 5GHz WLAN's has varying restrictions for use within the EEA; please refer to the Zebra Declaration of Conformity (DoC) for details at <http://www.zebra.com/doc>

Bluetooth® Wireless Technology for use through the EEA has the following restrictions:

- Maximum radiated transmit power of 100mW EIRP in the frequency range 2.400 -2.4835 GHz

### ***Statement of Compliance***

Zebra, hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directives 1999/5/EC and 2011/65/EU. Declaration of Conformities may be obtained from

<http://www.zebra.com/doc>

### ***Other Countries***

2.4GHz Radio Devices:

Mexico- Restrict Frequency Range to: 2.450 - 2.4835 GHz.

Sri Lanka-Restrict Frequency Range to: 2.400 - 2.430 GHz.

## Battery Information

Zebra rechargeable battery packs are designed and constructed to the highest standards within the industry. However, there are limitations to how long a battery can operate or be stored before needing replacement. Many factors affect the life of a battery pack such as heat, cold, customer usage profiles, age, and severe drops.

When batteries are stored over a year, battery cell manufacturers advise that some irreversible deterioration in overall battery quality may occur. To minimize this loss, they recommend storing batteries half charged in a dry, cool place between 41° and 77°F (5° and 25°C), the cooler the better) and removed from the equipment to prevent the loss of capacity. Batteries should be charged to half capacity at least once a year. If an electrolyte leakage is observed, avoid any contact with the affected area and properly dispose of the battery.

Replace the battery when a significant loss of run time is detected. Batteries must be charged within the 32° to 104°F (0° to 40°C) temperature range.

The standard warranty period for all Zebra batteries is one year, regardless if the battery was purchased separately or included as part of the mobile computer. For more information on Zebra batteries, please visit <http://www.zebra.com/batterybasics>.



## Waste Electrical and Electronic Equipment (WEEE)

**English:** For EU Customers: All products at the end of their life must be returned to Zebra for recycling. For information on how to return product, please go to: <http://www.zebra.com/weee>.

**Français:** Clients de l'Union Européenne: Tous les produits en fin de cycle de vie doivent être retournés à Zebra pour recyclage. Pour de plus amples informations sur le retour de produits, consultez : <http://www.zebra.com/weee>.

**Español:** Para clientes en la Unión Europea: todos los productos deberán entregarse a Zebra al final de su ciclo de vida para que sean reciclados. Si desea más información sobre cómo devolver un producto, visite: <http://www.zebra.com/weee>.

**Deutsch:** Für Kunden innerhalb der EU: Alle Produkte müssen am Ende ihrer Lebensdauer zum Recycling an Zebra zurückgesandt werden. Informationen zur Rücksendung von Produkten finden Sie unter <http://www.zebra.com/weee>.

**Italiano:** per i clienti dell'UE: tutti i prodotti che sono giunti al termine del rispettivo ciclo di vita devono essere restituiti a Zebra al fine di consentirne il riciclaggio. Per



informazioni sulle modalità di restituzione, visitare il seguente sito Web:  
<http://www.zebra.com/weee>.

**Português:** Para clientes da UE: todos os produtos no fim de vida devem ser devolvidos à Zebra para reciclagem. Para obter informações sobre como devolver o produto, visite: <http://www.zebra.com/weee>.

**Nederlands:** Voor klanten in de EU: alle producten dienen aan het einde van hun levensduur naar Zebra te worden teruggezonden voor recycling. Raadpleeg <http://www.zebra.com/weee> voor meer informatie over het terugzenden van producten.

**Polski:** Klienci z obszaru Unii Europejskiej: Produkty wycofane z eksploatacji należą zwrócić do firmy Zebra w celu ich utylizacji. Informacje na temat zwrotu produktów znajduj<sup>1</sup> się na stronie internetowej <http://www.zebra.com/weee>.

**Čeština:** Pro zákazníky z EU: Všechny produkty je nutné po skončení jejich životnosti vrátit společnosti Zebra k recyklaci. Informace o způsobu vrácení produktu najdete na webových stránkách: <http://www.zebra.com/weee>.

**Eesti:** EL klientidele: kõik tooted tuleb nende eluea lõppedes tagastada taaskasutamise eesmärgil Zebra'ile. Lisainformatsiooni saamiseks toote tagastamise kohta külastage palun aadressi: <http://www.zebra.com/weee>.

**Magyar:** Az EU-ban vásárlóknak: Minden tönkrement terméket a Zebra vállalathoz kell eljuttatni újrahasznosítás céljából. A termék visszajuttatásának módjával kapcsolatos tudnivalókért látogasson el a <http://www.zebra.com/weee> weboldalra.

**Slovenski:** Za kupce v EU: vsi izdelki se morajo po poteku življenjske dobe vrniti podjetju Zebra za reciklažo. Za informacije o vračilu izdelka obiščite: <http://www.zebra.com/weee>.

**Svenska:** För kunder inom EU: Alla produkter som uppnått sin livslängd måste returneras till Zebra för återvinning. Information om hur du returnerar produkten finns på <http://www.zebra.com/weee>.

**Suomi:** Asiakkaita Euroopan unionin alueella: Kaikki tuotteet on palautettava kierrätettäväksi Zebra-yhtiöön, kun tuotetta ei enää käytetä. Lisätietoja tuotteen palauttamisesta on osoitteessa <http://www.zebra.com/weee>.

**Dansk:** Til kunder i EU: Alle produkter skal returneres til Zebra til recirkulering, når de er udtjent. Læs oplysningerne om returnering af produkter på: <http://www.zebra.com/weee>.

**Ελληνικά:** Για πελάτες στην Ε.Ε.: Όλα τα προϊόντα, στο τέλος της διάρκειας ζωής τους, πρέπει να επιστρέφονται στην Zebra για ανακύκλωση. Για περισσότερες πληροφορίες σχετικά με την επιστροφή ενός προϊόντος, επισκεφθείτε τη διεύθυνση <http://www.zebra.com/weee> στο Διαδίκτυο.

**Malti:** Għal klijenti fl-UE: il-prodotti kollha li jkunu waslu fl-aħħar tal-ħajja ta' l-użu tagħhom, iridu jiġu rritornati għand Zebra għar-riċiklaġġ. Għal aktar tagħrif dwar kif għandek tirritorna l-prodott, jekk jogħġbok żur: <http://www.zebra.com/weee>.

**Slovenski:** Za kupce v EU: vsi izdelki se morajo po poteku življenjske dobe vrniti podjetju Zebra za reciklažo. Za informacije o vračilu izdelka obiščite: <http://www.zebra.com/weee>.

**Slovenčina:** Pre zákazníkov z krajín EU: Všetky výrobky musia byť po uplynutí doby ich životnosti vrátené spoločnosti Zebra na recykláciu. Bližšie informácie o vrátení výrobkov nájdete na: <http://www.zebra.com/weee>.

**Lietuvių:** ES vartotojams: visi gaminiai, pasibaigus jų eksploatacijos laikui, turi būti gražinti utilizuoti į kompaniją „Zebra“. Daugiau informacijos, kaip gražinti gamini, rasite: <http://www.zebra.com/weee>.

**Latviešu:** ES klientiem: visi produkti pēc to kalpošanas mūža beigām ir jānogādā atpakaļ Zebra otrreizējai pārstrādei. Lai iegūtu informāciju par produktu nogādāšanu Zebra, lūdzu, skatiet: <http://www.zebra.com/weee>.

## Software Support

Zebra wants to ensure that customers have the latest release of entitled software at the time of product purchase.

To confirm that your Zebra device shipped with the latest release of entitled software, visit: [www.zebra.com/support](http://www.zebra.com/support). Check for the latest software from *Software Downloads > Product Line/Product > Go*.

If your device does not have the latest entitled software release as of your product purchase date, please e-mail a request to Zebra at: [entitlementservices@zebra.com](mailto:entitlementservices@zebra.com).

You must include the following essential device information with your request:

- Model number
- Serial number
- Proof of purchase
- Title of the software download you are requesting.

If it is determined by Zebra that your device is entitled to the latest software release, you will receive an e-mail containing a link directing you to a Zebra Web site to download the appropriate software.



## Service Information

If you have a problem using the equipment, contact your facility's Technical or Systems Support. If there is a problem with the equipment, they will contact the Zebra Support at: <http://www.zebra.com/support>.

For the latest version of this guide go to:  
<http://www.zebra.com/support>.



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<http://www.zebra.com>

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**72-76346-06 Revision A - March 2015**

