Zebra® RW 220
Vehicle Cradle

Installation Guide

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Special Notices

The following notices emphasize certain information in the guide. Each serves a special purpose and is displayed in the format shown:

Note: Note is used to emphasize any significant information.

Caution: Indicates information that, if not followed, can result in damage to software, hardware, or data.

Caution-This symbol indicates a potentially hazardous situation which, if not avoided, can result in personal injury.

Caution-This warning symbol indicates a potentially hazardous situation which, if not avoided, may be a shock hazard.

Caution: This warning symbol also indicates an imminently hazardous situation which, if not avoided will result in death or serious injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents

Vehicle Installation Safety

Caution: Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

Caution: DO NOT OPERATE THE PRINTER WHILE DRIVING, as this may result in property damage or personal injury. Zebra Technologies Corp. does not promote the use of these products except when parked or stationary, and is not responsible for any loss resulting from the use or misuse of our products. Most importantly, we do not want to see harm come to our customers or anyone else.

Caution: Do not install the Vehicle Cradle where the printer will be exposed to precipitation or excessive condensation.

Caution: Do not install the Vehicle Cradle on or near an airbag cover plate or within an airbag zone. Also, do not install the Vehicle Cradle in a location that will affect vehicle safety or drivability.

Caution: If you are using a Mobile Charger in conjunction with the Vehicle Cradle, the means of routing and securing the Power Input cable to the vehicle power source is extremely important. Hazards associated with improper wiring can be severe. To avoid unintentional contact between the wire and any sharp edges, provide the cable with proper bushings and clamping where it passes through openings. If the wire is subjected to sharp surfaces and excess engine vibration, the wiring harness insulation can wear away, causing a short between the bare wire and the chassis.

If you are using a Mobile Charger in conjunction with the Vehicle Cradle it is very important to ensure you make the correct cable to power source connections, because electrical energy from a vehicle's power system can harm equipment and people.

Caution: If you are using a Mobile Charger in conjunction with the Vehicle Cradle, always refer to the installation guide provided with the charger for complete safety precautions and installation procedures.

Introduction

The RW 220 Vehicle Cradle allows use of the Zebra® RW 220 Receipt Printer in a vehicle. The Vehicle Cradle can be used in conjunction with a Zebra RCLI series charger module, which will use the vehicle's battery as a power source to run and charge the RW 220 printer's battery. Refer to the installation guide supplied with the charger for complete use and installation instructions and safety precautions.

An optional mounting arm provides the ability to locate the Printer and Vehicle Cradle in a variety of positions and mounting orientations to enhance its accessibility and ease of use.

The following instructions detail the installation and use of the RW 220 Vehicle Cradle. Following these instructions closely will ensure safe, reliable performance of the RW 220 Printer when installed in the Cradle.

The Printer runs off its own battery. If you are using this product in conjunction with a Zebra Mobile Charger, the charger module will only monitor and charge the printer's battery.

The user should always refer to the RW Series Quick Start Guide supplied with the printer, or the RW Series Users Guide for complete information on using the Printer. The Users Guide is available on-line at *www.zebra.com*

Figure 1: RW 220 Vehicle Cradle

Printer Retaining Pins

Latch Release
Lift up to release Printer from Cradle

Mounting Arm
Included with AK17463-018

Mounting Plate
Included with AK17463-018

Mounting Holes for RCLI series Charger Mounting hardware included with AK17463-018
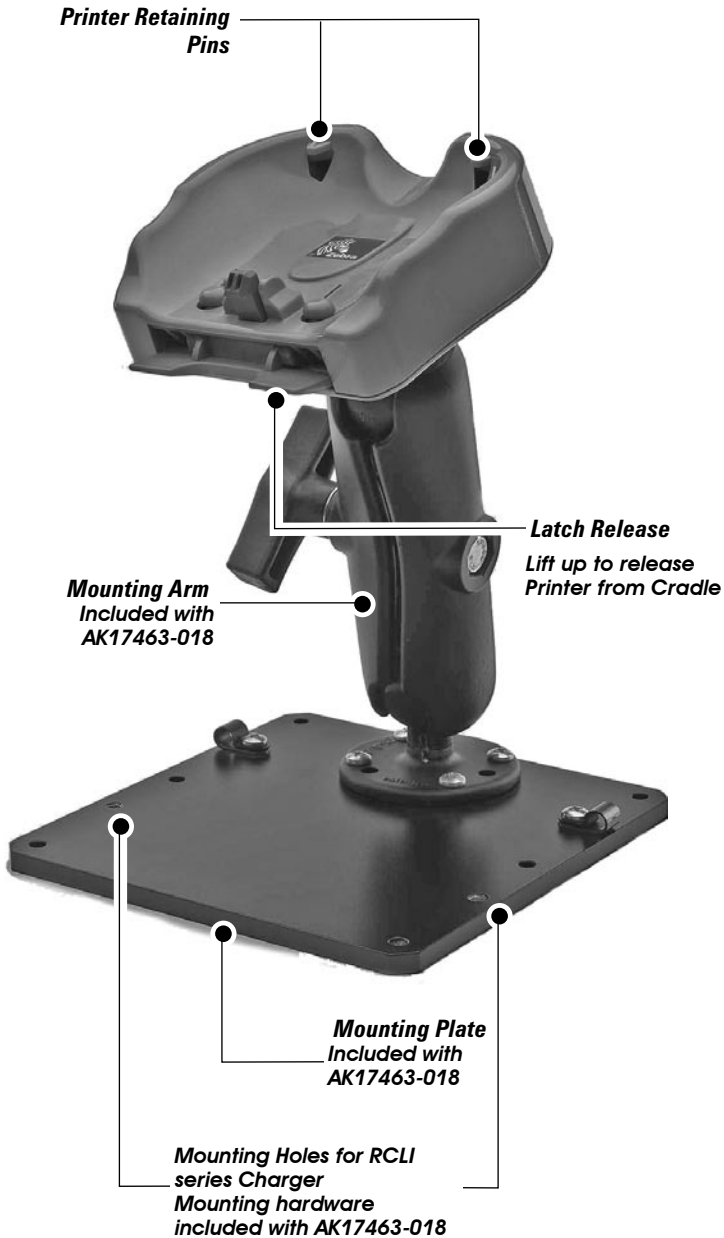
Required for Installation

- An electrical drill, 1/4"(6 mm) drill bit
- Common hand tools.
- #8-32 Screws or Bolts and appropriate mounting hardware for securing the Vehicle Cradle

Note: Use of appropriate hardware used to secure the Vehicle Cradle to the vehicle is the responsibility of the installer

References

- RW Series Quick Start Guide
- RW Series User's Guide
- RCLI-DC Mobile Charger Installation Guide
- RCLI-AC Charger Installation Guide

Note: Reference documents are available for download at www.zebra.com

Contents of the Package

- The RW 220 Vehicle Cradle Assembly. Two versions are offered:
  p/n **AK17463-018**- Includes the RW 220 Cradle Assembly, a mounting arm, a base plate and mounting hardware.
  p/n **AK17463-019**- Includes the RW 220 Vehicle Cradle only.
- This Guide is included with both versions.

Installation

Introduction to Installation

The RW 220 Vehicle Cradle allows you to mount a RW 220 printer into virtually any vehicle.

This cradle does not supply power to the printer. A Zebra RCLI series Mobile Charger can be used in conjunction with the RW 220 Vehicle Cradle to supply intelligent charging using the vehicle's electrical system.

One version of the RCLI Charger supplies an input power cable that can be plugged into an automotive vehicle's cigarette lighter.

Caution: Under no circumstances should this equipment be attached directly to the vehicle's battery without a proper fuse.

Since each situation or equipment type may pose unique requirements, mounting hardware selection and mechanical installation shall be the responsibility of the installer. Zebra recommends using self-locking (ESN) nuts, bolts, and/or lock washers for installing the mount. The Cradle is secured with #8-32 mounting hardware (4 places).

Note: Hardware used to secure the Vehicle Cradle to the vehicle is not supplied in the installation kit.

Figure 2: RW 220 Vehicle Cradle Installation Dimensions (Printer Installed)

4.00" [102 mm]

7.00" [178 mm]

4.82" [122 mm]

4.50" [114 mm]

1.25" [32 mm] min. clearance for charger plug

2.30" [58 mm]

0.60" [15 mm]

5.25" [133 mm]

8.75" [222 mm]

1.5" [38 mm]

1.19" [30 mm]

#8-32 x .38" [9 mm] dp. (x4)
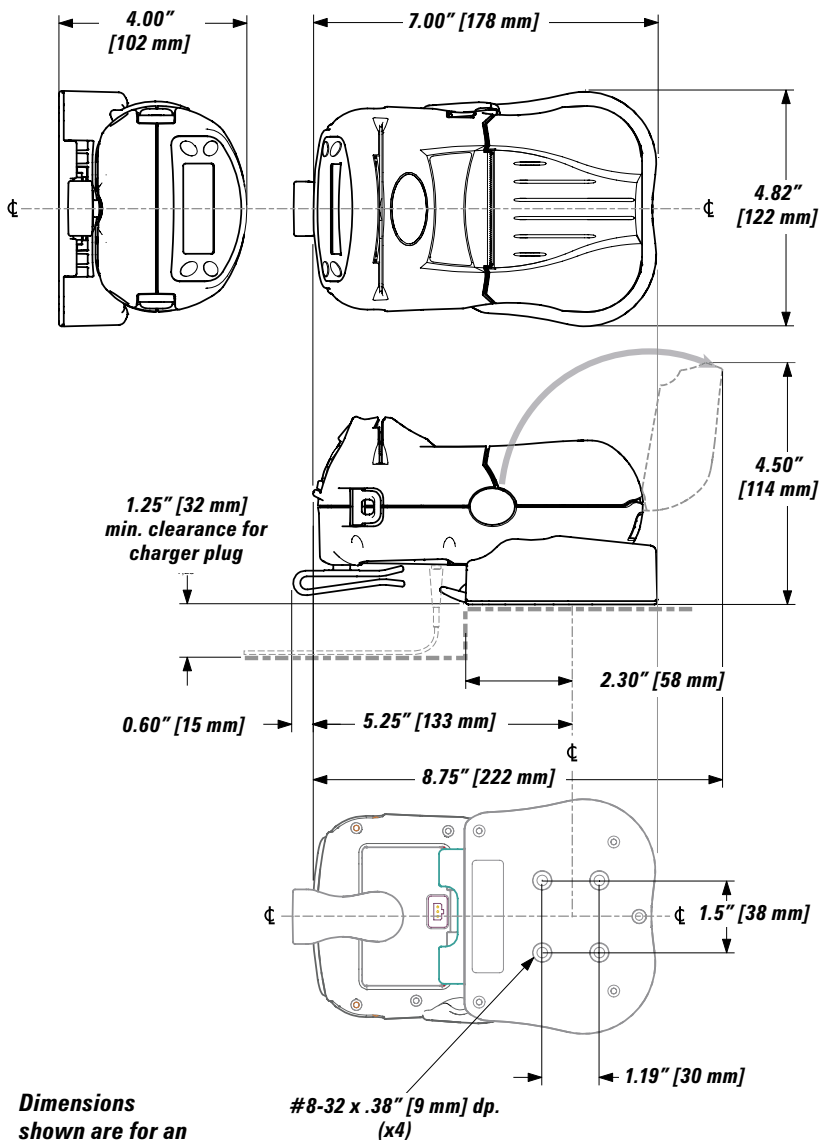
Dimensions shown are for an RW 220 with the MSR/Smart Card option.

You must:
- Mechanically prepare and install the RW 220 Vehicle Cradle
- Connect the power input cable from the vehicle's electrical system if you are also using a Zebra Mobile Charger
- If you are communicating to the RW 220 printer with a data I/O cable from the data terminal: Route the cable in such a way as to allow use of both the printer and the data terminal.

It is important to leave a free zone around the printer to allow loading of paper and routine cleaning of the print head. Refer to Figure 2.

If you are installing the optional mounting arm, remember the arm provides a considerable range of movement for the Cradle and Printer. This allows adjustment to the best position for the operator. Extra clearance should be provided for this movement if it is desired in the installation. Refer to pages 18-20 for more information on installing the Cradle using the Mounting Arm.

Some models of the RW 220 have a Magnetic Stripe Card reader and a Smart Card reader installed. If these features are to be used, the printer must be located so that the operator will have clear access to the reader's slots for these cards. Refer to the RW Series Users Guide for more information on the use of the Magnetic Stripe Reader/Smart Card reader features.

Decide where you will mount the printer, and proceed with the following instructions.

⚠️ *Caution: Mount the Printer and Vehicle Cradle where it will not interfere with the operator or cause harm in case of an accident.*

Vehicle Cradle Preparation

Plan your installation with the above considerations in mind, and locate the Printer and Vehicle Cradle so that the operator can easily load printing media, operate the printer's controls and perform routine maintenance such as cleaning the printhead. Follow these guidelines:

1. Select a location in the vehicle that will avoid personal contact in case of an accident.
2. If you are using a Mobile Charger to charge the printer, make sure that the input power cable routing does not invite damage to the cable. To avoid unintentional contact between the wire and any sharp edges, provide the cable with proper bushings and clamping where it passes through openings.

Printer Preparation

Prepare the printer for installation into the Vehicle Cradle by installing the Battery prior to mounting the printer in the Cradle.

Place the Printer over the Retaining Pins in the Cradle.

Rock the Printer into the Cradle to latch it in position.

Plug data I/O cable into Communications port

Plug Charger output cable into Charger Jack
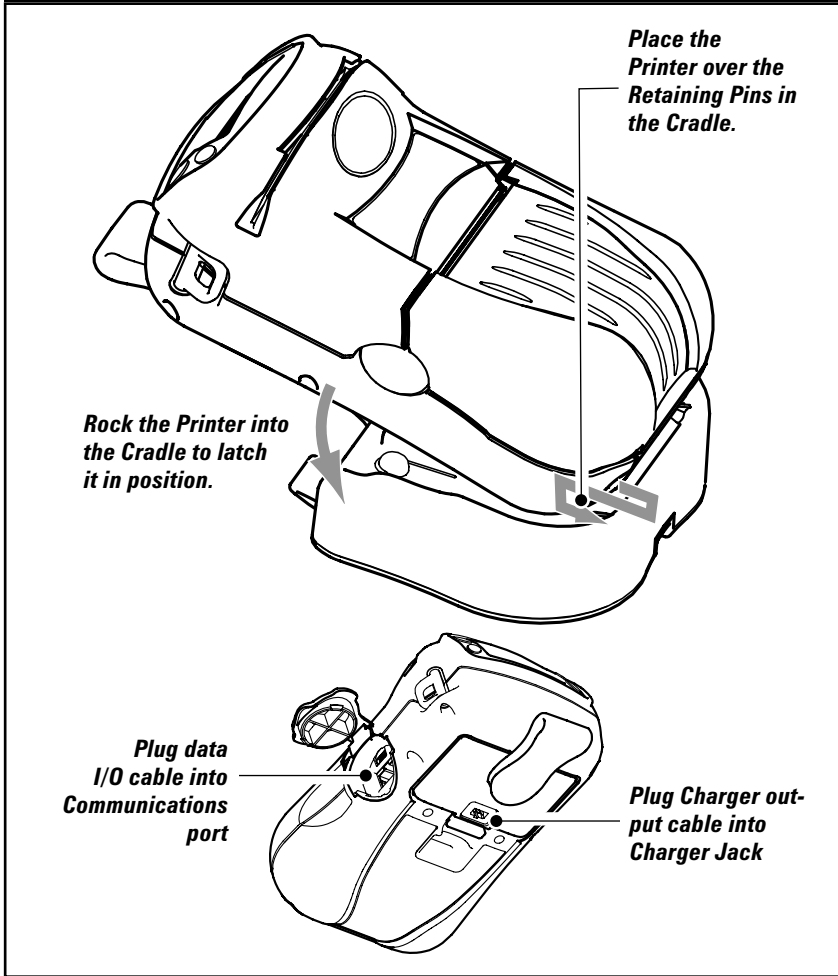
⚠ *Caution: It is strongly recommended that as a safety precaution the adjustable shoulder strap be removed prior to docking the Printer. This precaution will ensure the strap will not interfere with proper operation of the vehicle.*

Printer Installation

The RW 220 Printer can now be installed in the Vehicle Cradle:

1. Place the bottom of the printer over the two pins in the Cradle.
2. Rotate the Printer into the Cradle and press firmly until it latches in place.
3. If you are using a Zebra Mobile Charger:
   • Plug the Charger's output cable into the charger jack on the bottom of the printer.
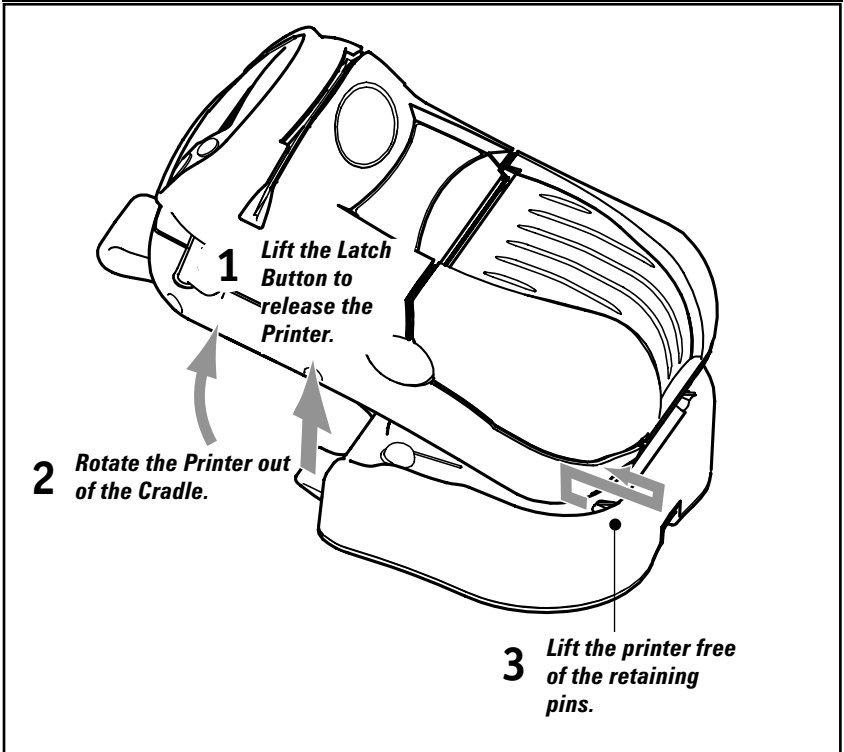
- Turn the vehicle's power source on, and verify that the power indicator light and the charger light on the charger module are lit.

4. Turn the printer on and print a configuration label to verify that the printer is functioning properly.

Refer to the RW Series User's Guide for instructions on printing a configuration label.

5. If you will be communicating to a data terminal with a data I/O cable, turn the printer off, plug in the data I/O cable and turn the printer back on.

Figure 4: Removing the Printer from the Vehicle Cradle

1 Lift the Latch Button to release the Printer.

2 Rotate the Printer out of the Cradle.

3 Lift the printer free of the retaining pins.

Removing the Printer

Please refer to Figure 4. Remove the Printer by doing the following:

- Turn the Printer off.
- If the Printer is directly connected to a communications cable, unplug and remove the cable from the Printer.
- If you are using a Zebra Mobile Charger, unplug the charger

from the charger jack.
- Press the latch release button on the Vehicle Cradle and pivot the Printer out of the Cradle.

Loading Media

Follow the loading procedures found in the RW Series Users Guide.

Printer Access

The media compartment and operator controls can be reached while the printer is secured in the Vehicle Cradle.

If you need to remove the printer for servicing follow the printer removal procedure detailed above.

Connections to a Terminal

Communications with a Terminal

If you are also installing a terminal in the vehicle, consult the terminal manufacturer's literature for installation instructions. If the terminal and Printer will communicate using either an RS232 or USB cable, use shielded cables and keep their length as short as possible. Ensure the routing of the cable does not invite damage to the cable or interfere with the control or use of the vehicle.

If you are communicating by means of a USB or RS232C cable, you must use a Zebra communications cable designed for use with your terminal.

Consult your Zebra Sales Representative or re-seller for information on the various I/O data cables offered by Zebra for use with a variety of widely used terminals.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

If the terminal and the Printer will communicate via an RF link, it is the installer's responsibility to test the strength and reliability of such a link prior to final installation.

Power Connections to a Terminal

If you are also installing a terminal in the vehicle, you must run two separate cables from the vehicle power source: one to the printer and one to the terminal.

Caution: Do not attempt to power both devices from the same power cable.

The terminal power cable must be either supplied by the terminal manufacturer or fabricated by the installer.

It is the installer's responsibility to determine the suitability of running a terminal from the vehicle's battery.

Installing the Mounting Arm

Description

A mounting arm is included in Zebra accessory kit p/n AK17463-018. The mounting arm allows a more versatile method of positioning the RW 220 printer. It consists of an arm with a ball and socket joint at either end, which in turn are terminated with a mounting flange. One flange is secured to the Cradle by the four mounting holes provided on the bottom plate, and the other is secured to the desired mounting surface. A clamp on the arm locks the Cradle in the desired position.

Installation

⚠️ *Caution: Mount the Printer and Vehicle Cradle where it will not interfere with the operator or cause harm in case of an accident.*

⚠️ *Caution: If you are using a Zebra Mobile Charger, do not connect the input power cable to the Vehicle Cradle until the Cradle and Mounting Arm installation has been completed.*

For ease of installation, the Arm can be disassembled by loosening the clamp enough to remove the two ball and socket flanged ends. These end flanges can then be easily secured to the Vehicle Cradle and the desired mounting surface. Then the arm can be slipped over the two ends and the clamp tightened to secure the Cradle in position.

When installing the mounting arm, remember that the arm provides a considerable range of movement for the Vehicle Cradle and Printer. Extra clearance should be provided for this movement if it is desired in the installation.

Some models of the RW 220 will have a Magnetic Stripe Card reader and a Smart Card reader installed. If these features are to be used, the printer must be located so that the operator will have clear access to the reader's slots for these cards. Refer to the RW Series Users Guide for more information on the use of the Magnetic Stripe Reader/Smart Card reader features.

Mounting Hardware

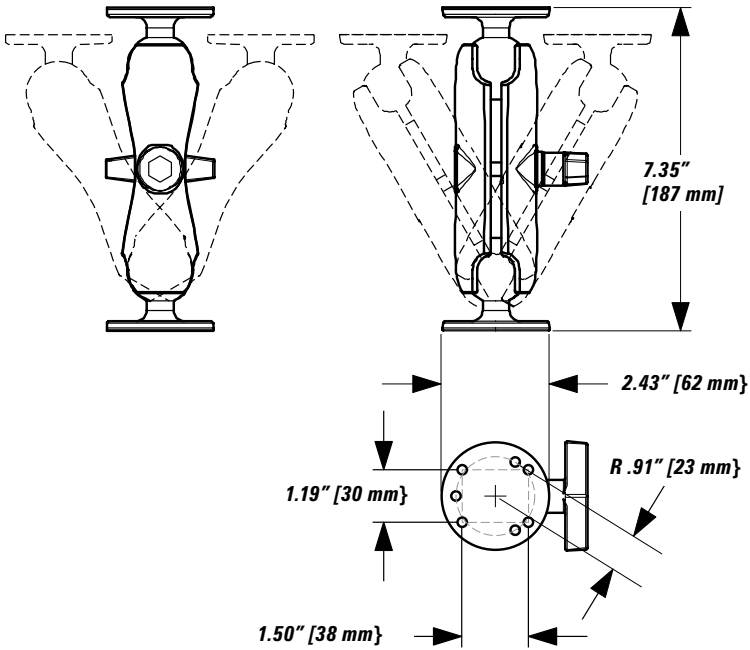Mounting hardware is supplied with the Mounting Arm Kit. The #8-32 x 1/2" Screws should be used to secure one end of the arm to the bottom of the Vehicle Cradle. The #10-24 x 3/4" Screws and associated hardware may be used to secure the other end of the arm to the desired mounting surface or to the mounting plate supplied with p/n AK17463-018.

Vehicle Cradle Preparation

Locate the Printer and Cradle so when installed with the

Figure 7: Optional Mounting Arm Dimensions

**7.35"
[187 mm]**

2.43" [62 mm}

R .91" [23 mm}

1.19" [30 mm}

1.50" [38 mm}

Figure 8: Securing the Vehicle Cradle to the Mounting Arm

Vehicle Cradle

**Use #8 hardware
supplied with
kit to secure to
Cradle**

**Use #10 hardware
supplied with kit to
secure charger**

Tightening Clamp

**Use #10 hardware
supplied with
kit to secure to
mounting surface**

**RCLI series
Charger**

Base Plate
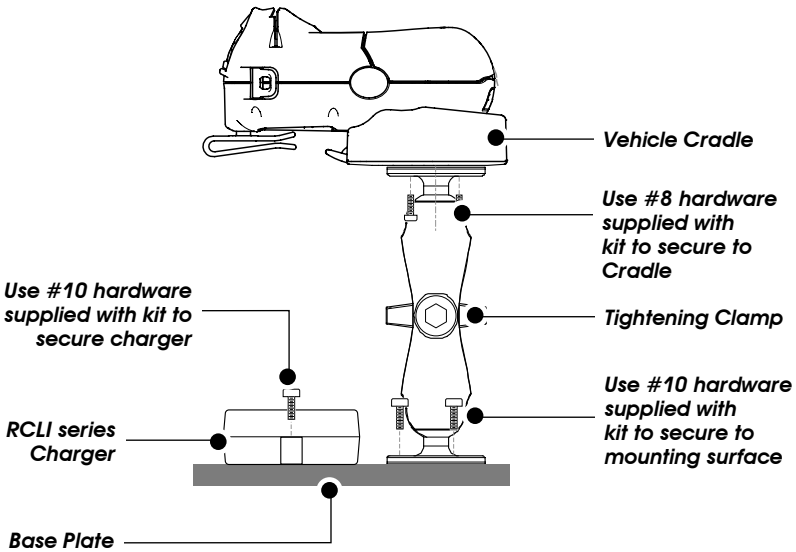
Mounting Arm the operator can easily load printing media, operate the printer's controls and perform routine maintenance such as cleaning the printhead. Follow these steps:

1. Select a location in the vehicle that will avoid personal contact in case of an accident.
2. Turn the Cradle upside down and secure one of the mounting flanges from the movable Arm to the bottom of the Vehicle Cradle with the (4) #8-32 x 1/2" Screws supplied with the Mounting Arm.
3. Secure the other mounting flange on the Movable Arm to the desired mounting surface. The accessory kit supplies a mounting plate with pre-drilled holes for securing the mounting arm. The plate can then serve as a stable base if the printer is being used in a non-vehicular application, such as on a desk or table top.

⚠️ *Caution- Never use the RW 220 Vehicle cradle in conjunction with the mounting arm and the mounting plate in a vehicle without securely attaching it to the vehicle.*

The mounting arm may also be directly mounted to a secure surface, such as in a vehicle. You may use the supplied #10-24 x 3/4" Screws and associated hardware supplied in the Mounting Arm Kit or use other hardware as the mounting conditions dictate.

Installing a Mobile Charger

If you are using a Zebra RCLI series Charger to charge the printer's battery, use the supplied installation guide for instructions on correct connection to a power source and the printer.

Accessory Kit AK17463-018 includes mounting hardware for securing an RCLI series Charger to the supplied base plate.

The following table lists the RCLI series chargers which can be used with the RW 220 printer

DESCRIPTION	MOBILE CHARGER P/N	INPUT VOLTAGE
RCLI-DC Mobile Charger 12 VDC	CC16614-1	12 VDC
RCLI-DC Mobile Charger 9-30V	CC16614-2	9 to 30 VDC
RCLI-DC Mobile Charger 30-60V	CC16614-3	30 to 60 VDC
RCLI DC Mobile Charger 12 VDC (w/ plug for cigarette lighter socket)	CC16614-9	12 VDC
RCLI-AC Charger	CC16614-4	100 to 240 VAC; 50/60 Hz

Input Power Completion

Route the input power cable per the earlier section in this Guide: "Input Power Cable Completion."

Technical Support

U.S. ONLY

Zebra maintains a help line for questions involving installation and use of the RW 220 Vehicle Cradle.

Please have as much information as possible regarding your particular application ready when you call to enable the technical support personnel to help you. The number in the U.S. is +01.847.913.2259 and is open Monday through Friday from 7:00 AM to 5:30 P.M. P.S.T.

ALL OTHERS

For Technical Support please contact your local Zebra sales representative listed below:.

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