

MMQ4 Mobile Mount

INSTALLATION INSTRUCTIONS



READ THIS MANUAL CAREFULLY! FAILURE TO INSTALL THIS EQUIPMENT PER THESE INSTRUCTIONS WILL VOID THE WARRANTY.



Zebra Technologies Corporation

Mobile Printer Center of Excellence

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.



Warning: This warning symbol 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.

GENERAL WARNINGS AND CAUTIONS



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



Caution: Read the installation instructions before you connect the system to its power source.

Note: Zebra technologies Corporation is not liable for personal injury or damage to any equipment caused by the improper installation of this equipment to any power source. Check with the vehicle manufacturer or dealer for installation assistance in order to prevent the voiding of the vehicle warranty or maintenance contract.



Warning: Risk of ignition or explosion. Explosive gas mixture may be vented from the vehicle battery. Work only in a well ventilated area. Avoid creating arcs and sparks at the battery terminal

MMQ4 Mobile Mount Installation Guide

INTRODUCTION

NOTE: Zebra technologies Corporation is not liable for personal injury or damage to any equipment caused by the improper installation of this equipment to any power source.

The MMQ4 Mobile Mount system is designed to integrate a Zebra™ QL 420 Printer and a Zebra RCLI-DC Mobile Charger into the electrical and mechanical systems of a vehicle. Once installed it will provide intelligent charging capabilities for the printer's battery and protection from accidental damage to the printer.

The RCLI-DC series of Mobile Chargers are supplied separately from the Mobile Mount installation Kit. They should be installed in accordance with their installation guides and under the supervision of properly trained and qualified personnel. The following installation instructions pertain only to the mechanical installation of the MMQ4 mobile mount. Follow them closely to ensure safe, reliable performance of the QL 420 Printer in a mobile environment

The printer is powered with its own battery which is charged by a RCLI-DC Series Mobile Charger System which runs off the vehicle's DC electrical system. Refer to the RCLI-DC charger installation Guide for more detail on their use and installation.

It is important that the vehicle's electrical system be functioning properly. The vehicle's charging circuit must work properly and vehicle-generated electrical "noise" must be minimized and within specifications.

The vehicle charging circuit must neither undercharge nor over-charge the vehicle battery. Defective ignition wiring, damaged insulation, or faulty vehicle electrical components can cause electrical noise and excess electrical noise can be severe enough to defeat the electrical filtering that is built into the printer. When this happens, computers and printers can behave unpredictably.

NOTE: All of these systems must be connected in strict accordance with the instructions in this document. Failure to install this equipment per these instructions will void the warranty.

Tools Required

- An electrical drill, drill bits 1/4”(6 mm))
- Taps-1/4-20 and #6-32 (M6 and M3).
- Common hand tools.

Reference

- QL 420 User's Guide
- The RCLI-DC Mobile Charger Installation Guide

Contents of the Package

- The Mobile Mount Bracket Assembly
- The Lift Truck Mounting Bracket
- The Fanfold Bin
- A plastic bag containing mounting hardware, and the Fanfold Spacer
- This Guide

INTRODUCTION TO INSTALLATION

The MMQ4 Mobile Mount allows you to mount a QL 420 printer into virtually any vehicle. The RCLI Mobile Charger (supplied separately from this kit) can provide a source of power to run and charge the printer's battery from the vehicle's electrical system.

Installation of the Mobile Charger is covered in the RCLI-DC Mobile Charger Installation Guide supplied with each charger.

In all installations, the power cable is wired to the vehicle's battery power system indirectly through a power take-off point.

CAUTION: Under no circumstances should the equipment be attached directly to the vehicle's battery or an AC power source 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 mount is pre-drilled for 1/4” (M6) hardware.

NOTE: Hardware used to secure the Mobile Mount to the vehicle is not supplied in the kit. Recommended fasteners are 1/4” (6 mm) diameter hex head or socket head bolts with flat washers, lock washers, nuts and/or locking nuts.

Your tasks are to:

- Mechanically install the MMQ4 Mobile Mount
- Install the Mobile Charger (if used in this installation) according to the RCLI-DC Mobile Charger Installation Guide
- Connect the Data I/O cable from the data terminal (if used) and the output cable from the Mobile charger.

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

Installing a Terminal

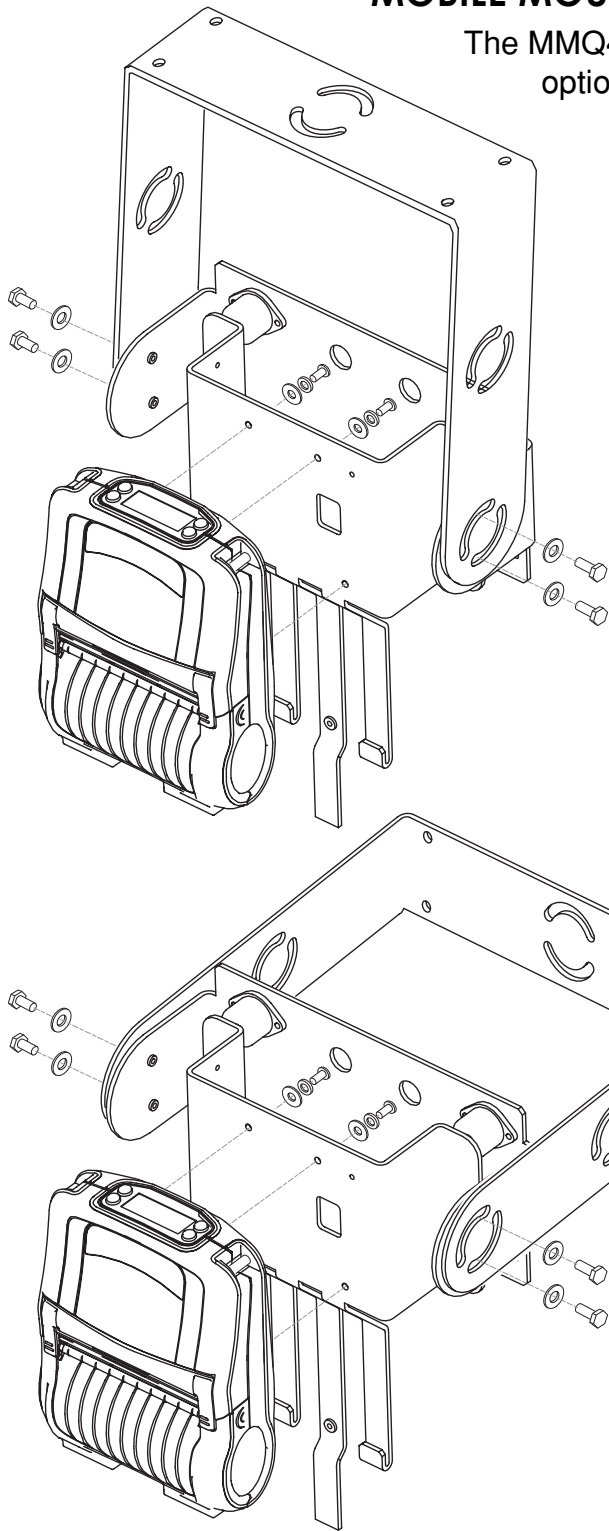
You most likely will be installing a terminal at the same time. Follow the terminal manufacturer's instructions for installing his unit. The printer and terminal usually are linked together with a data cable which typically is no longer than six (6) feet (183 cm).

Some installations may require the terminal and printer to communicate via radio frequency

(RF) rather than cables.
Plan your installation with these considerations in mind, and locate the printer so that the operator can easily load printing media and operate the printer's controls.

MOBILE MOUNT MECHANICAL INSTALLATION

The MMQ4 Mobile Mount provides two basic mounting options, to allow maximum flexibility in location. The RCLI-DC Mobile Charger module is shipped separately. The Mobile Charger is mounted external to the Mobile Mount, depending on the individual location's requirements.



Vertical Mounting
(numbers in italics are in cm.)

height	width	depth	depth w/ bin
21.32"	11.63"	8.2"	11.07"
<i>54.2</i>	<i>29.5</i>	<i>20.83</i>	<i>28.1</i>

Horizontal Mounting
(numbers in italics are in cm.)

height	width	depth	depth w/bin
14.30*	11.63	15.65	18.00
<i>36.32*</i>	<i>29.5</i>	<i>39.75</i>	<i>45.72</i>

* includes minimum clearance for access to controls

Figure 1
Standard Mounting Configurations

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. In addition, the Mobile Mount allows for some rotation of the printer to allow the best positioning for the operator. Extra clearance should be provided for this movement if it is desired in the installation.

NOTE: Mount the Printer where it will not hit the operator in case of an accident.

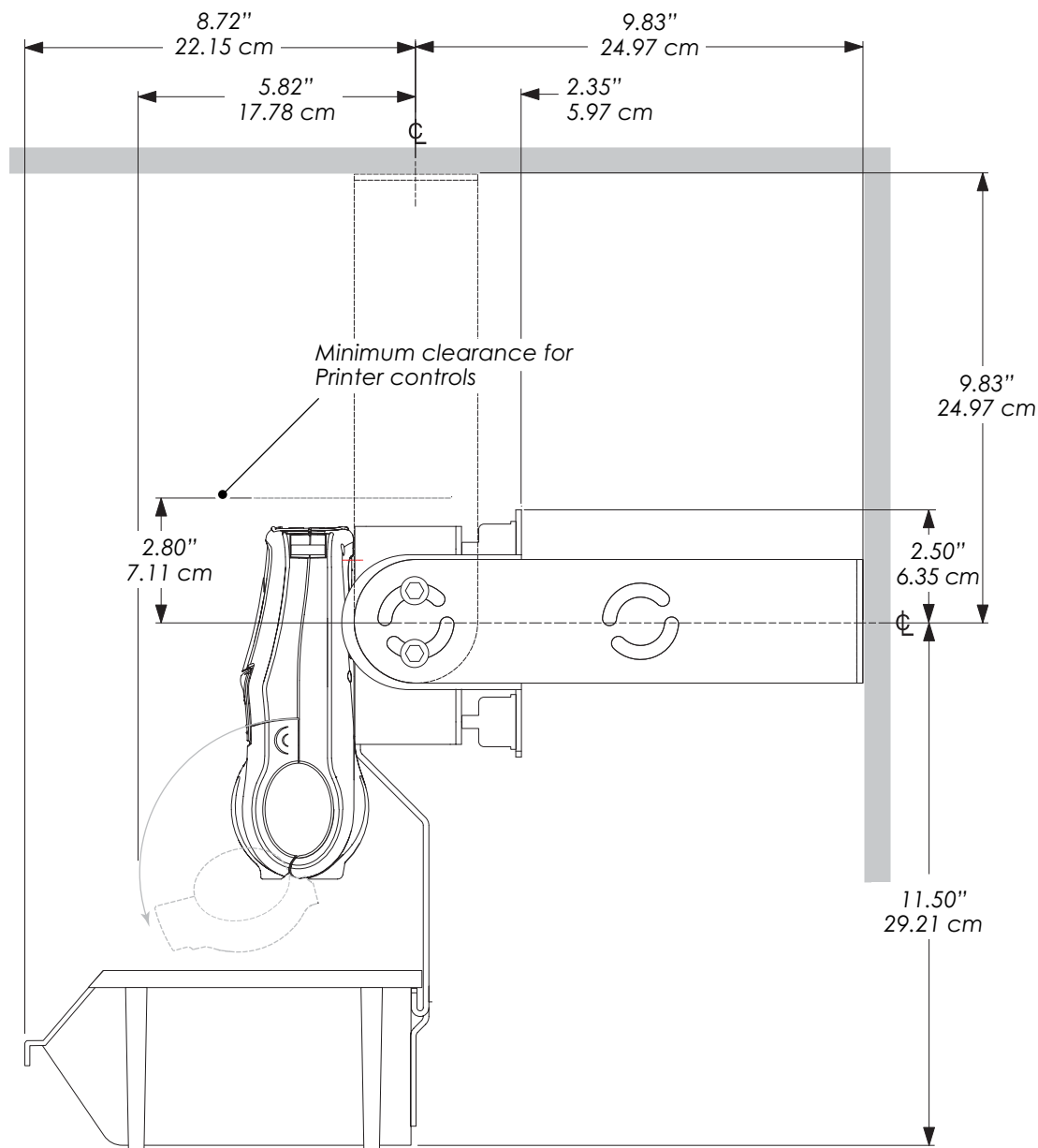
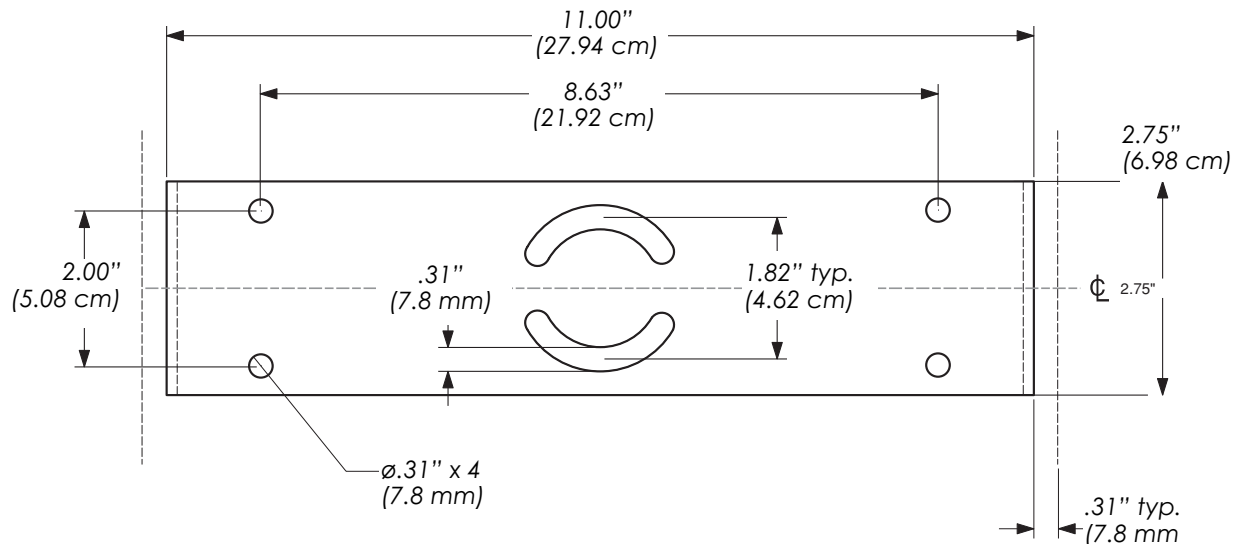


Figure 2
Horizontal and Vertical Mounting Details

Refer to Figure 2 for details on mounting dimensions. The mounting bracket can also be used as a template for locating mounting holes on the vehicle. Note that a clearance of .31" (7.8 mm) must be left on either side of the Mount Bracket for mounting hardware. The mounting dimensions in Figure 1 reflect this.



Note that using a MMQ4 Mobile Mount assembly in the horizontal configuration requires leaving a *minimum* space of .63" (1.6 cm) from any horizontal surface which will overhang the printer controls. Do not use the circular cutouts as the only mounting point for the bracket when using the horizontal configuration.

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PRINTER INSTALLATION

Printer Preparation

Prepare the printer for installation by doing the following:

- If your printer has a carrying strap, you must remove it by the following procedure (Refer to Figure 4) :
 1. Unscrew the (2) #4-40 x 1" screws holding the top corners of the printer together.
 2. Remove the Carrying Strap and the (2) Bushings.
 3. Replace the Bushings back in the top corners of the printer and re-install the two #4-40 x 1" screws
- Remove the Belt Clip from the back of the Printer (Refer to Figure 4).
- If your printer is equipped with a shoulder strap, remove it by un-clipping each end from the "D" rings.
- Always install the Battery prior to mounting the printer in the Mobile Mount.

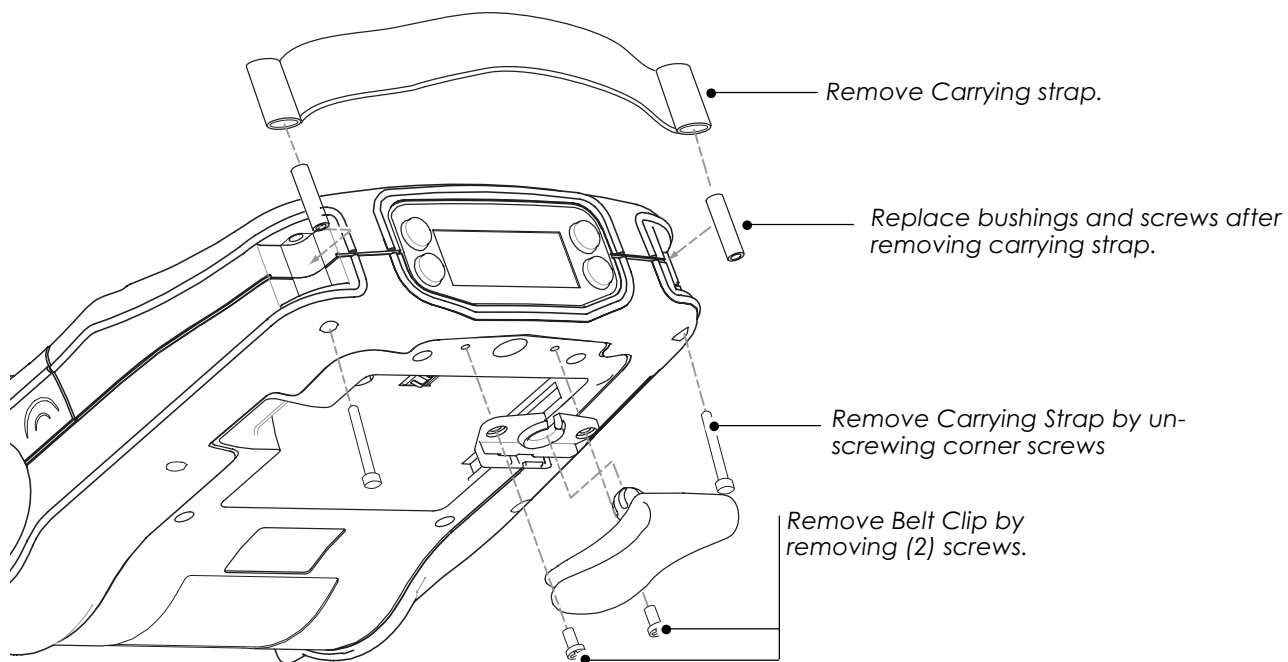


Figure 4:
Printer Preparation

Printer Installation

The QL 420 Printer can now be installed in the Mobile Mount. Secure the printer to the Mobile Mount Bracket with (4) #8-32 x 3/8" Screws, Lock Washers and Flat Washers. (See Figure 5). Plug the output voltage cable from the Mobile Charger into the bottom of QL 420 Printer. (Note: In some installations it may be easier to plug the charger cable into the printer prior to securing the Printer to the Mobile Mount.) If desired, you can use one of the supplied cable clamps and a #6-32 x 1/4" screw to hold the cable in position.

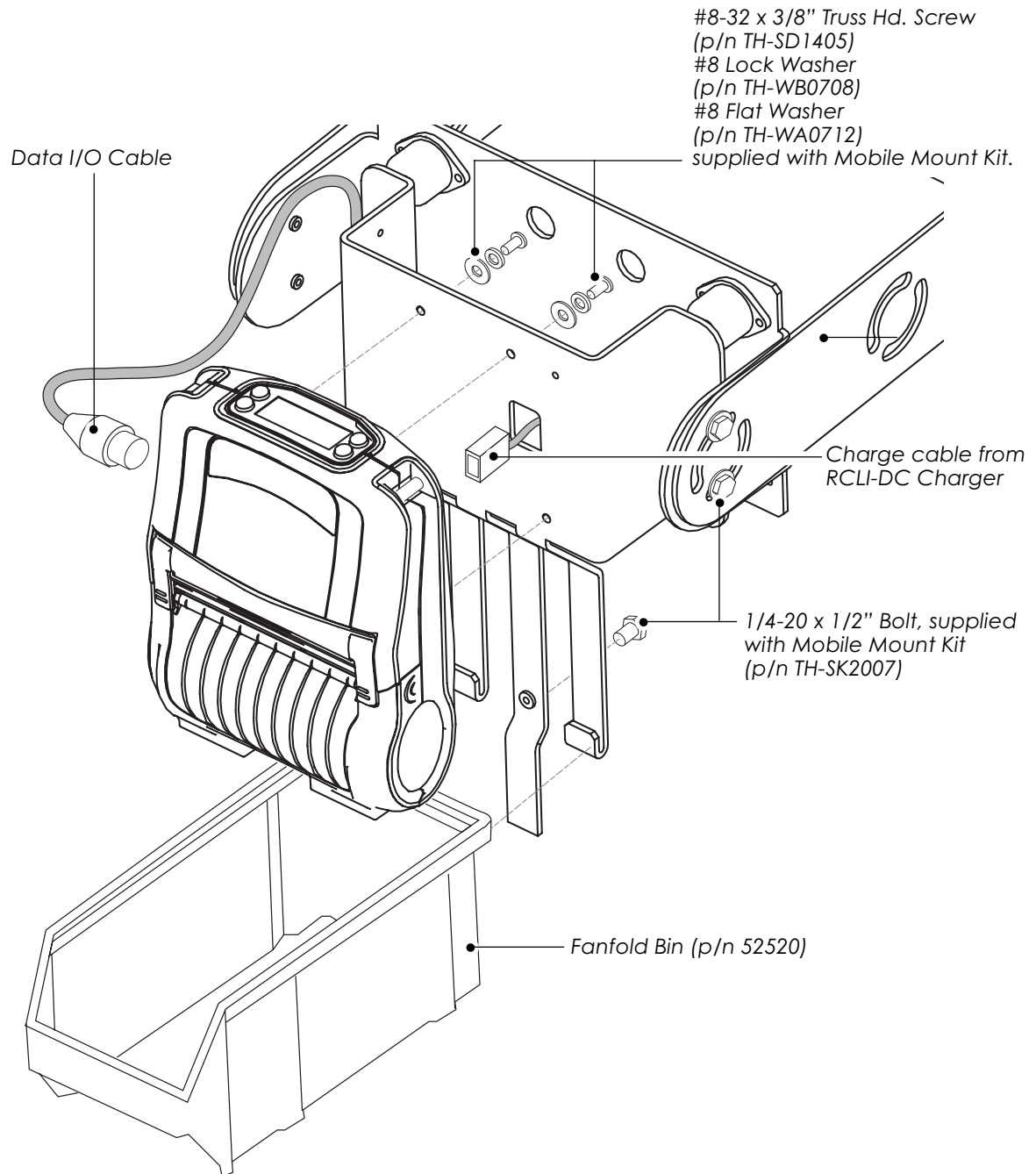


Figure 5:
Printer Installation

Attaching the Fanfold Bin

If the printer will be using fanfold media, you must install the fanfold bin to the Mobile Mount. Hook the lip on the back of the tray to the corresponding “hooks” on the mobile Mount. Install a 1/4- 20 Hex head screw to the back of the center bar on the Mobile Mount which supports the fanfold bin and tighten it to secure the bin.

Loading Media

Follow the loading procedures found in the QL 420 User’s Guide. Note that if you are using Fanfold media, you must install the Fanfold Spacer (p/n BA16625-1) between the printer’s media supports. The Spacer is included with the MMQ4 Mobile Mount Kit.

Note: The Mobile Mount is designed for a maximum loading of 12 lbs [5.4kg] including the weight of media. Ensure no extra items are suspended from the Printer, the Mobile Mount Bracket of the Fanfold bin.

Printer Removal:

There is no need to remove the printer from the Mobile Mount during normal use and cleaning. All access doors and controls can be reached with the printer secured in the mount.

To remove the printer for servicing or repairs:

- Un-plug the power cable and the data I/O cable (if installed.)
- Remove the (4) mounting screws and their associated hardware. You can access the mounting screws through access holes in the Mobile Mount bracket.

FINAL CONNECTIONS

If you are communicating data to the QL 420 with a cable you must connect a “Data I/O” cable between the terminal and the printer. If desired, you can use one of the supplied cable clamps and a #6-32 x 1/4” screw to hold the cable in position. Consult the factory 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

Notes on Mobile Charger Installation

NOTE: Always refer to the RCLI-DC Mobile Charger Installation Guide for complete information on installing the Mobile Charger.

Charger Location

Locate the Mobile Charger in a location convenient to the printer. Follow these guidelines:

- Select a location in the vehicle that will avoid personal contact in case of an accident.
- If you are using the Mobile Charger in conjunction with an MMQ4 Mobile Mount, place the Charger so that you can easily unplug the charger’s output cable from the Printer’s battery connection.
- Route the charger’s output cable to prevent undue strain being placed on the connection to the printer’s battery.
- Make sure that cable routing does not invite damage to the cable.
- Secure the Charger with #6 (3mm) hardware using the mounting flanges molded into the Charger cover. Insure that the mounting hardware will not become loose due to vibration by using locking hardware or prevailing torque fasteners.

Connect the Printer

- Plug the output cable from the Charger to the battery connection on the printer. (Refer to the QL 420 User's Manual for more information.) If you are using a MMQ4 Mobile mount, it may be easier to plug in the charger connector before mounting the Printer to the Mobile Mount bracket.
- Turn the power source for the charger on, and verify that the indicator lights on the Charger's front panel are lit and the Charger is functioning properly. Refer to Table 1 in the RCLI Mobile Charger Installation Guide for indicator display information.

CONNECTING A TERMINAL

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

NOTE: Zebra Technologies Corporation is not liable for personal injury or damage to equipment caused by improper installation to any power source.

SPARE PARTS

The following list of parts is included with the MMQ4 Mobile Mount Kit. They are intended for use in the installation of the QL 420 printer and routing power and data I/O cables.

PART	DESCRIPTION	QTY.
TH-SK2007	SCREW, 1/4"-20 X 1/2" HEX HD.	5
30466	WASHER .62 O.D.	4
THRMP22CC370187	CLAMP, CABLE	2
TH-SD1203B	SCREW #6-32 X 1/4" BLK	2
TH-SD1405	SCREW, #8-32 X 3/8" TRUSS HD.	4
TH-WB0708	WASHER, LOCK # 8	4
TH-WA0712	WASHER, FLAT # 8	4
BA16625-1	SPACER, FAN-FOLD QL 420	1
52520	BIN	1
505203	BRACKET MNTD LIFT TRUCK	1

Mounting hardware for the Mobile Mount is not supplied in the kit.

Recommended fasteners for the Mobile Mount are 1/4" (6 mm) diameter hex head or socket head bolts with flat washers, lock washers, nuts and/or locking nuts.

Recommended fasteners for the Mobile Charger are #6-32 (M3) bolts, flat washers and lock washers

TECHNICAL SUPPORT

U.S. ONLY

Zebra maintains a help line for questions involving installation of the MMQ4 Mobile Mount. 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 (800)-556-7266. and is open Monday through Friday from 8:00 am to 4:30 P.M.. E.S.T.. Ask for Mobile Mount Technical Support.

ALL OTHERS

For Technical Support please contact your local Zebra sales representative.



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