



Intermec



Installation
Instructions



**PK80 Series
80-Column Printer**

The PK80 Series 80-Column Printer and associated electrical wiring should be installed under the supervision of properly trained and qualified personnel. Follow these installation instructions to ensure safe, reliable performance of the PK80 Series Printer.

Installation Kits



Note: Battery cables at various lengths and other power cables are sold separately. See “*Inside Sales*” in the *PK80 Series 80-Column Printer User’s Manual* (P/N: 961-018-004) for ordering information and part numbers.

Intermec Technologies Corporation has the following vehicle installation kit available for the PK80 Series Printer:

- PK80 Cable Installation Kit (P/N: 203-660-001)

These kits allow you to wire the printer and vehicle dock in a delivery vehicle. Your Intermec Representative can help you determine the best installation approach.

When the installation is complete, you will have a secure place to store the printer and mobile computer. The vehicle electrical system will provide power to operate the printer and vehicle dock.

In this installation, the power cable is wired directly to the vehicle battery. This reduces installation problems and takes advantage of the vehicle battery filtering.

The installation kits contain nuts, bolts, washers, a terminal ring, and a fuse link (on direct to battery installations) for connecting the battery cable *directly* to the vehicle battery. These kits also contain adjustable wire clamps to secure the cable in place.

Installation Procedures

This section will lead you through these three installation steps:

- 1 Electrical installation (battery cable).
- 2 Mechanical installation (printer).
- 3 Final assembly and cable connection.

Tools Required

You should have a wire crimping and stripping tool; an electric drill with 3/16” and 9/16” drill bits; a screw-captivating screwdriver, a voltmeter, and common hand tools.

Vehicle Electrical System



Note: If the vehicle voltage is too high or too low, the printer may not work.

The vehicle electrical system must be in good condition for all types of installations. The charging circuit must work properly and vehicle-generated electrical “noise” must be minimized. Do the following to determine your vehicle’s voltage level:

- 1 Measure the vehicle battery voltage with a voltmeter. It should read approximately 13.0 V dc with the engine OFF.
- 2 Start the vehicle engine. Continue monitoring the battery’s voltage while you run the engine at a fast idle for five minutes. Ideally, the voltage should read below 14.5 V dc. The voltage can go up, *but not over*, 18.0 V dc.



Note: If the battery voltage exceeds 18.0 V dc, there is a problem with the vehicle electrical system which must be diagnosed and repaired before the printer and vehicle dock will work properly. Check your engine for a bad voltage regulator or a poor ground, either of which can cause excessive voltage.

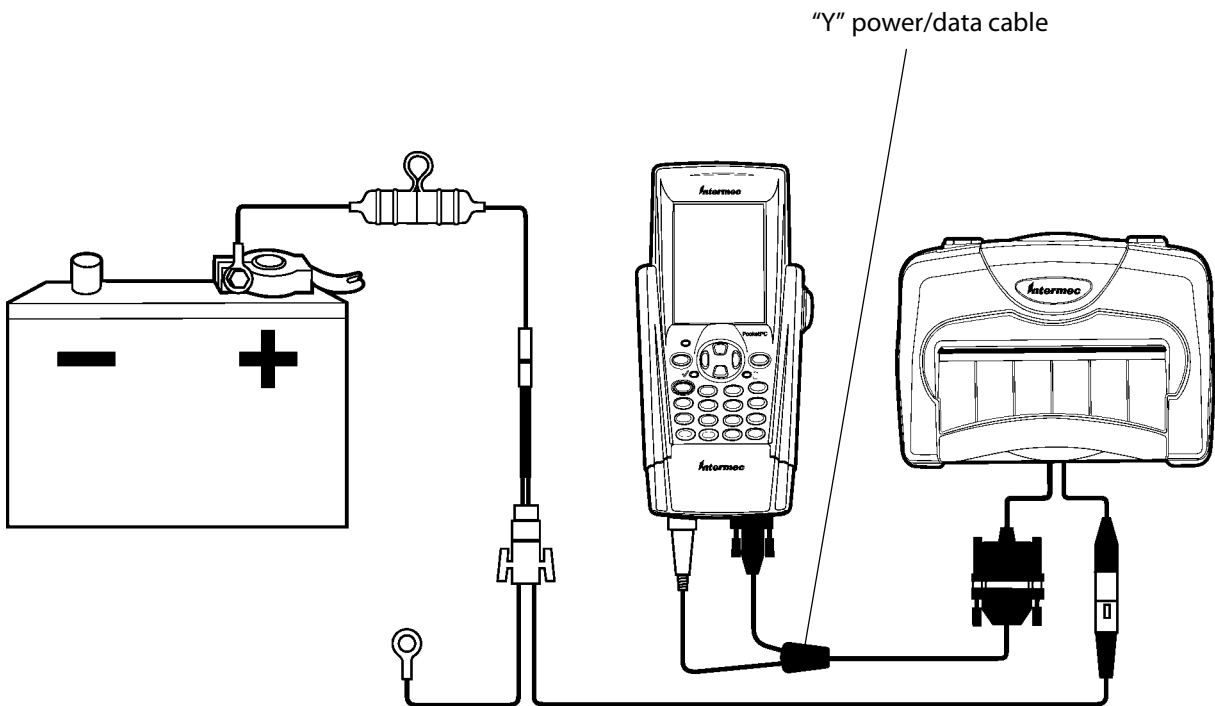
Excess electrical noise can be severe enough to defeat the electrical filtering that is built into Intermec[®] cables, printers, and vehicle docks. Defective ignition wiring, damaged insulation, or a faulty vehicle electrical component can cause electrical noise — possibly causing unpredictable behavior in printers and docks.

Electrical Installation

Decide where to mount the PK80 Series Printer and optional vehicle dock, then follow the appropriate instructions.

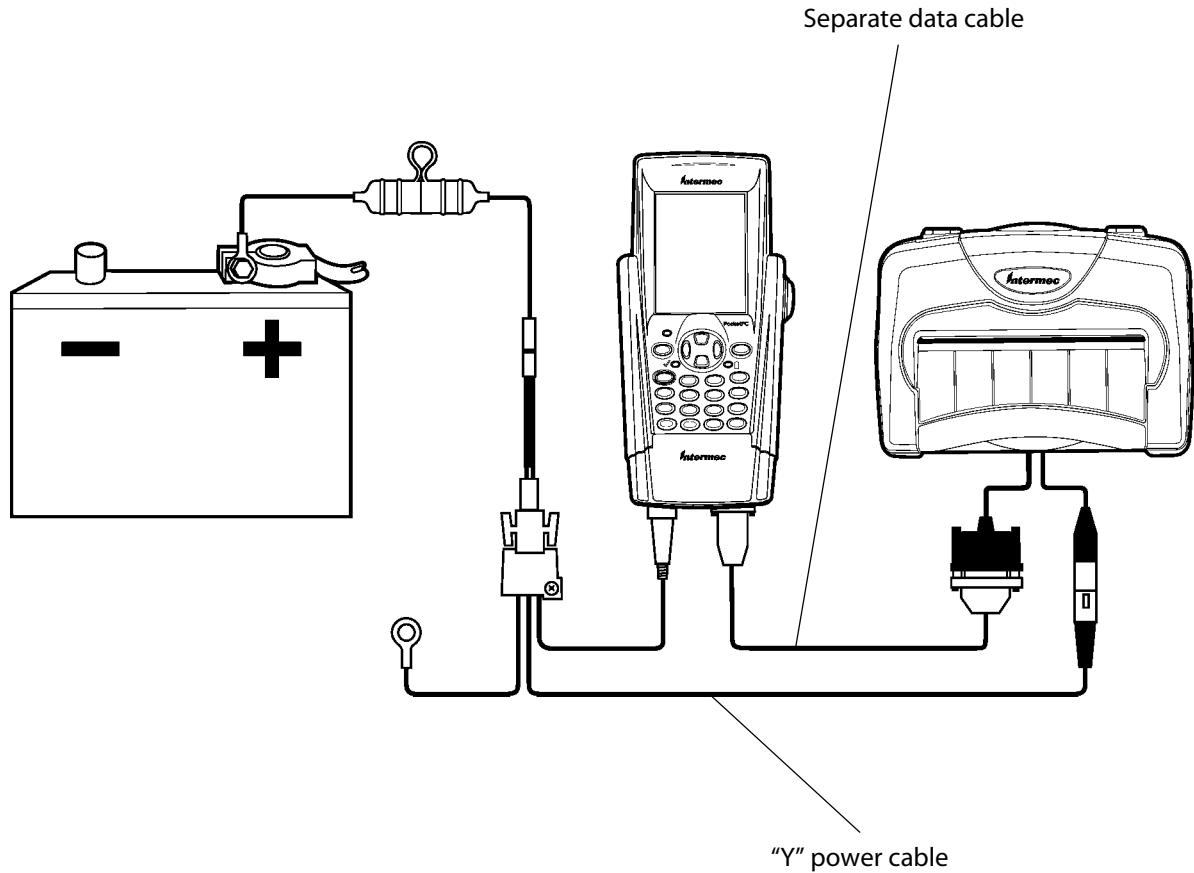
Power Cable Routing

- **Cable Length:**
A printer dc power cable connects the printer to the vehicle battery cable, extending the overall cable length (*go to page 6*).
- **“Y” Power/Data Cable**
Note that this is the recommended routing. A “Y” cable that includes power and data communication to the vehicle dock.



- **“Y” Power Cable:**

A special “Y” cable *and* a remote data communications cable are required when using vehicle docks with 700 Series Computers. The “Y” cable limits the separation of the dock and printer to eight feet (2.4 meters). However, using separate power cables for the dock and printer do allow you to locate the printer and the vehicle dock up to 30 feet (9.1 meters) apart.



“Y” Power Cable

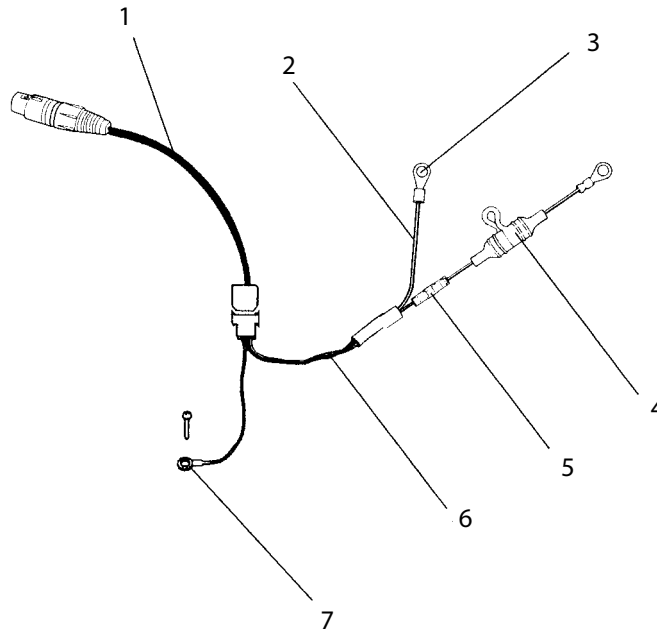
A “Y” cable is available to connect all of the components of your configuration. This cable can take the place of the dc power cable shown in the illustration (item #1) on page 6.

With the 700 Series Computers, a “Y” cable supplies power to both the vehicle dock or the remote terminal holder and to the printer. The rectangular connector plugs into the vehicle battery cable.

Direct-to-Battery Cable Installation

We recommend you connect printers directly to the battery based on the following criteria:

- The vehicle battery acts as an electrical filter and regulator.
- If there is any damage to the printer dc power cable, the cable is easily replaced.



- 1 DC power cable — 4 feet or 1.2 meters (goes to printer)
- 2 Black (or brown) wire
- 3 3/8" terminal ring
- 4 Fuse link assembly with 15-amp fuse
- 5 Splice
- 6 Vehicle battery cable — 8, 16, or 22 feet (2.4, 4.9, or 6.7 meters)
- 7 Chassis ground

Route the Cables

Use the following guidelines when routing the printer dc power cable and the vehicle battery cable:

- Route the vehicle battery cable *from* the area where the printer will be mounted *toward* the vehicle battery.
- When possible, route the printer power cable along with existing vehicle wiring. Use cable ties to join the cable and wiring together.
- Use a snap-in bushing (requires 9/16" hole) if the vehicle battery cable passes through the firewall or other sheet-metal.
- Make sure that cable routing does not interfere with other equipment or vehicle controls.
- Ensure that cable routing does not invite damage to the cable.
- Secure the vehicle battery cable at least every 18 inches (50 centimeters) throughout the cable run: use adjustable clamps (provided) or wire-tie to existing vehicle cable runs.
- Completely install the printer power cable and take voltage measurements *before* connecting the printer.

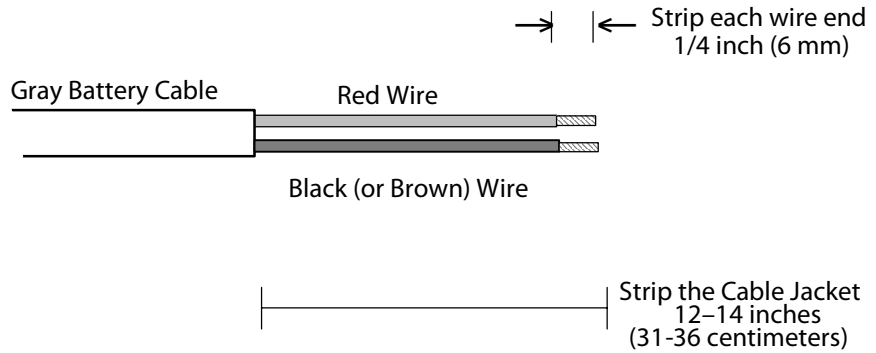
Prepare the Vehicle Battery Cable

After you have routed the vehicle battery cable to the vehicle battery, perform the following to prepare the vehicle battery cable for the terminal ring and fuse link assembly. *The gray vehicle battery cable must be connected according to the instructions on the next page:*

Strip the Vehicle Battery Cable Jacket

Do the following to strip the gray vehicle battery cable jacket and insulation:

- 1 Cut the gray battery cable near the battery to avoid coiling or tying excess cable.
- 2 Strip the battery cable jacket (gray) back 12–14 inches (31–36 centimeters).
- 3 Strip 1/4" (6 mm) of insulation from the black (or brown) and red wires.



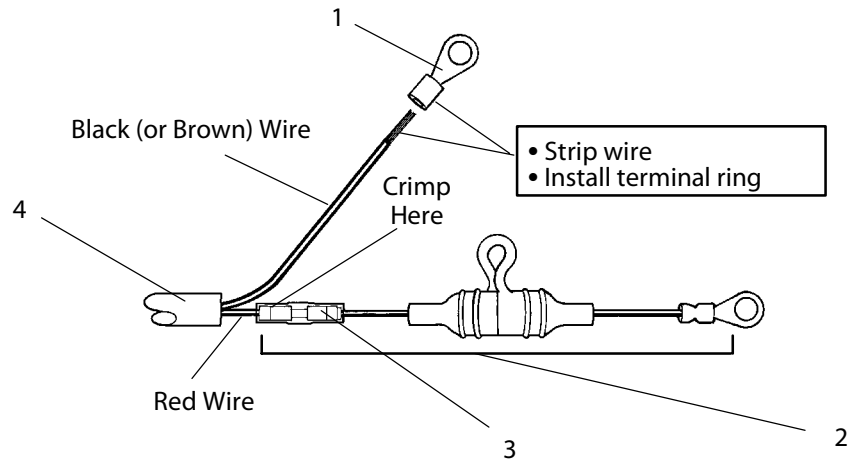
Crimp the Cable Ends

Do the following to attach a terminal ring and a preassembled in-line fuse link to the vehicle battery cable.



Note: You may have to shorten and restrip the red wire when attaching the fuse link assembly.

- 1 Strip the black wire.
- 2 Crimp the 3/8" terminal ring (1) onto the black wire.
- 3 Locate the fuse link assembly (2) and attach it to the red wire (shorten the red wire if desired).
- 4 Then, strip 1/4" (6.0 mm) of insulation off the red wire.
- 5 Crimp the red wire onto the fuse link (3).



- 1 3/8" terminal ring
- 2 Fuse link assembly
- 3 Fuse link
- 4 Vehicle battery cable

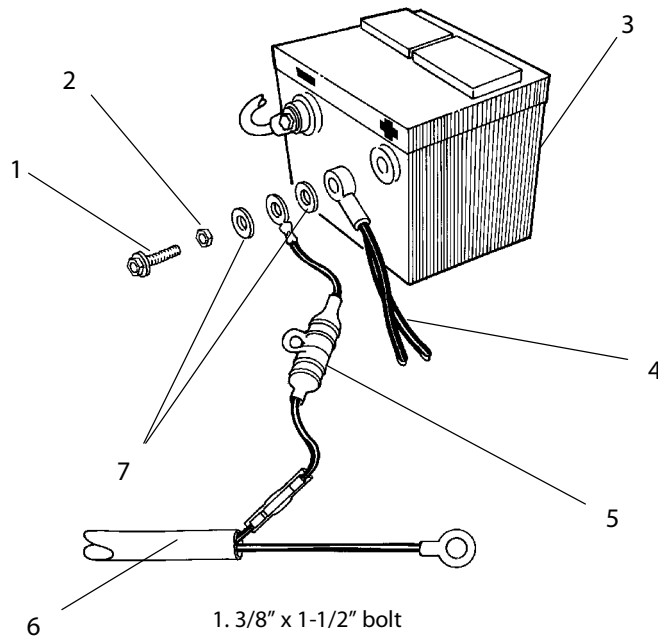
Connect to the Vehicle Battery

Your vehicle has either a top-mount battery with the terminals on the top; or a side-mount battery with terminals on the side. Determine which battery is in your vehicle and proceed with the applicable instructions:

Connect to a Side-Mount Vehicle Battery

Do the following to attach the vehicle battery cable to a side-mount battery terminal as shown in the following illustration:

- 1 Disconnect the *negative* battery cable, then the *positive* battery cable.
- 2 Remove the bolts from each battery cable.
- 3 Screw a 3/8" nut (2) as far as it will go onto a 3/8" x 1-1/2" bolt (1) furnished in the kit.
- 4 Slip a 3/8" washer (7) onto the bolt.
- 5 Slide the *positive* (red wire with fuse link (5)) terminal ring from the printer power cable (6) onto the bolt (1).
- 6 Slip a second 3/8" washer (7), then slip the vehicle *positive* battery cable (4) onto the bolt.
- 7 Thread the bolt assembly (described in steps 3 through 6) into the *positive* (+) battery terminal.
- 8 Securely tighten the bolt (1), then the nut (2) installed in step 3 to secure washers (7) and cables into place.
- 9 Repeat steps 3–8 for the *negative* vehicle battery cable wire (black or brown), hooking up the *negative* cable to the *negative* battery terminal.

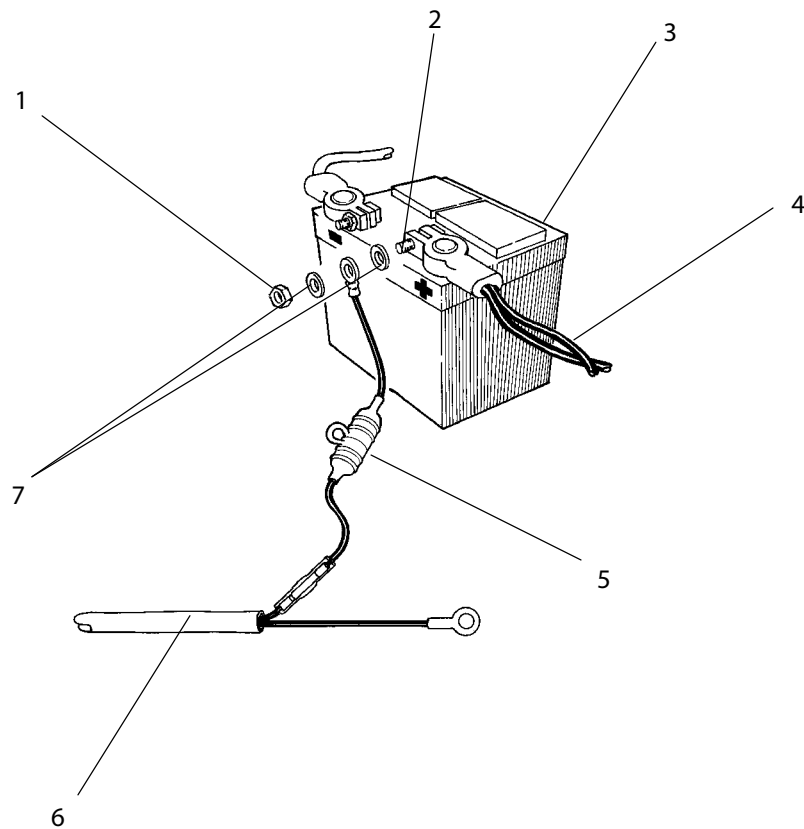


1. 3/8" x 1-1/2" bolt
- 2 3/8" nut
- 3 Vehicle battery
- 4 Vehicle battery cable
- 5 Fuselink
- 6 Printer power cable
- 7 3/8" washers

Connect to a Top-Mount Vehicle Battery

Do the following to attach the vehicle battery cable to a top-mount battery terminal as shown in the following illustration:

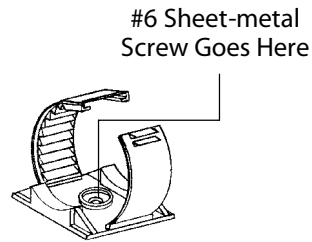
- 1 First, disconnect the *negative* battery cable, then disconnect the *positive* battery cable.
- 2 Remove the bolts from the battery cable and replace these bolts with 3/8" x 1-1/2" bolts (2) and nuts (1) furnished in the installation kit.
- 3 Reinstall the *positive* battery cable, then tighten the nut (1) securely.
- 4 Slip a 3/8" washer (7) onto the extended end of each bolt.
- 5 Slide the *positive* (fuse link with red wire (4)) terminal ring from the printer power cable (6) onto the positive (+) battery bolt (2).
- 6 Slip a second 3/8" washer (7) onto that bolt (2).
- 7 Thread and tighten a second 3/8" nut (1) onto that bolt (2).
- 8 Repeat steps 3–7 for the *negative* battery cable wire (black or brown), connecting the wire to the *negative* battery terminal.



- 1 3/8" nut
- 2 3/8" x 1-1/2" bolt
- 3 Vehicle battery
- 4 Vehicle battery cable
- 5 Fuselink
- 6 Printer power cable
- 7 3/8" washers

Secure the Vehicle Battery Cable

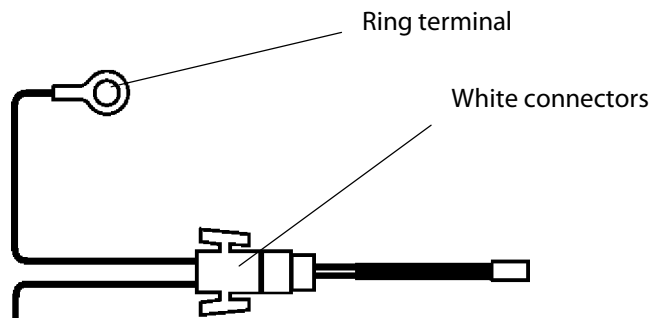
- 1 Secure the vehicle battery cable every 18 inches (50 centimeters) with adjustable cable clamps or with twist ties. Work from the battery, toward the mounting area for the printer.
- 2 Clean the areas on which the clamps are to be attached.
- 3 Remove the paper backing from a clamp and stick the clamp in place while drilling a pilot hole with a #26 drill bit. Use #6 sheet-metal screws to permanently hold clamps in place.



Ground the Printer Power Cable

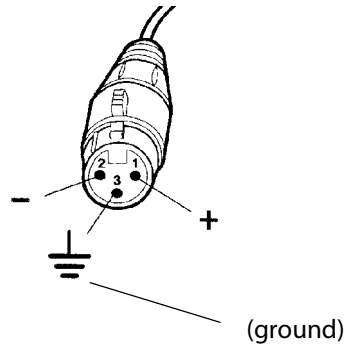
The printer power cable has a ground strap (or wire) that must be fastened to vehicle sheet-metal to ensure proper cable shielding. This ground strap is the wire with a ring terminal by the white connectors between the dc power cable and the vehicle battery cable. Follow these steps to fasten the ground strap:

- 1 Drill a small hole (*slightly smaller than the screw diameter*) where the chassis ground strap for the power cable connector is to be fastened. Use a punch to dimple and enlarge the hole.
- 2 Scrape a small circle of paint from around the hole to ensure a good electrical connection.
- 3 Use a #8 x 5/8" screw and flat washer to secure the strap.



Printer Power Cable Voltage

Verify the printer power cable voltage and polarity (as indicated), then plug the printer dc power cable into the printer power connector.



Use a voltmeter to test the cable before connecting the cable to the PK80 Series Printer. Set the voltmeter for dc volts.

Voltmeter Readings for Printer Power Cable

Red Lead	Black Lead	Reading DC Volts	Meaning
Pin 1	Pin 2	12-15	<ul style="list-style-type: none">• If 0 volts, check battery connections.• If negative voltage, wires on the battery are reversed. <i>Do not connect wire to printer.</i>• If less than 12 volts, then the vehicle battery or connections are bad.• If more than 15 volts, the connection is across more than one 12-volt battery or the truck charging system is faulty. <i>Do not connect the wire to the printer.</i>
Pin 1	Pin 3	12-15	If 0 volts, check connection done on page 12.
Pin 2	Pin 3	0	If other than 0 volts, check connection to battery negative terminal and connection done on page 12.

Mechanical Installation

The Fixed Mount Printer can be installed in one of several ways. *Note that screws are not provided, you will have to provide a set based on your configuration needs.*

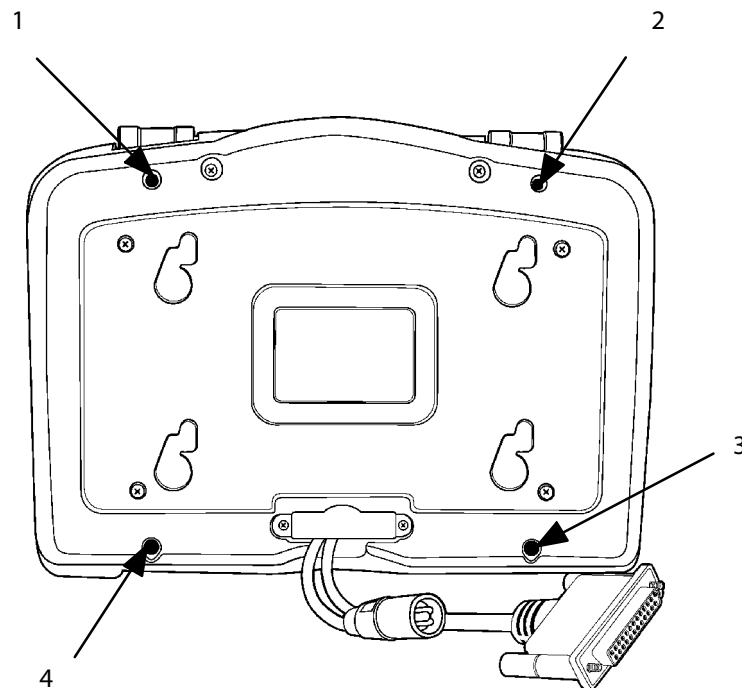
- Onto the wall (*page 15*)
- Attached to a mounting plate (*page 16*)
- Attached to a dashboard mount (*page 21*)

Create the Printer Mounting Holes



Note: There is an 11x17 foldout in the back of these instructions with a drill template for the PK80 Printer. You can use this template to mark the center punch locations for the mounting holes of the printer.

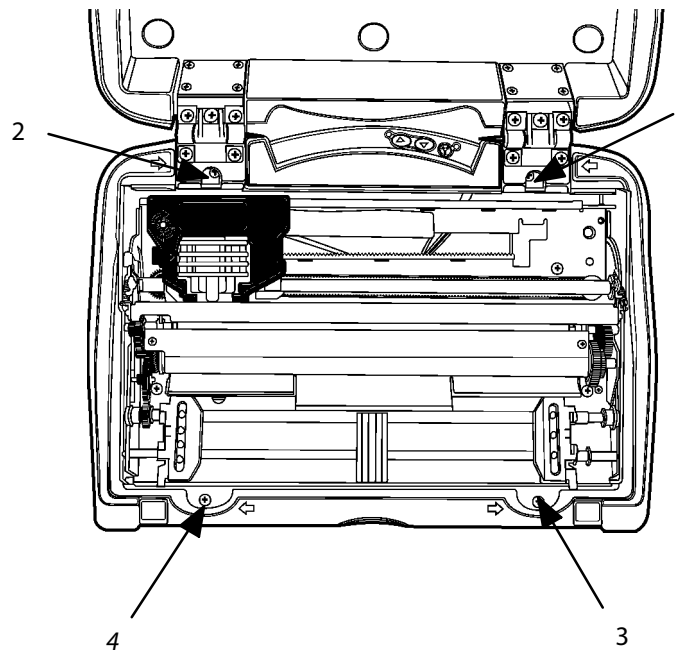
Before you can hang the printer on the wall or secure it to a mounting plate, you need to use a screwdriver to punch open the plastic from the mounting holes in the back of the printer. The mounting holes are in black in the following illustration.



Secure on a Wall

The Fixed Mount Printer can hang, without a mounting plate, on the wall of a vehicle. An area of 14.25" x 10" x 4.75" (36.20 x 25.40 x 12.07 cm) would be required. Be sure to leave enough room beneath the printer for a box of paper to fit between the printer and the floor.

Align the printer onto the wall and open the lid upward. Use four 1/4-20 screws to secure the printer to the wall of the vehicle through the mounting holes indicated in the illustration below. *Note that the length of these screws may vary based on your installation needs. A screw-captivating or magnetic screwdriver is recommended.*



This illustration points out each of the holes for this procedure. Look for arrows embedded in the frame next to each of the holes.

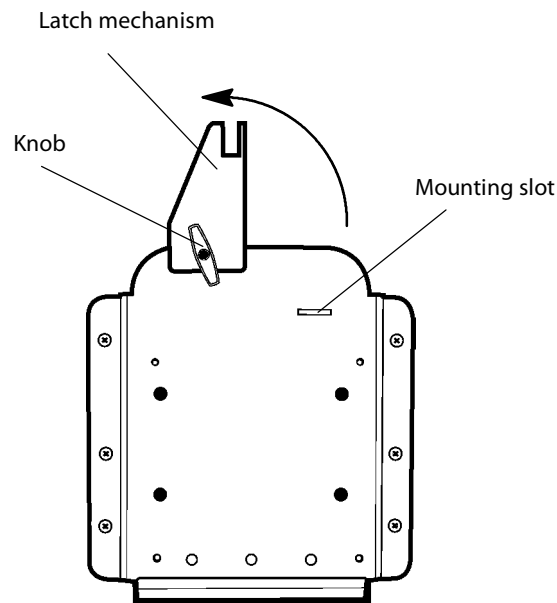
Attach to a Mounting Plate



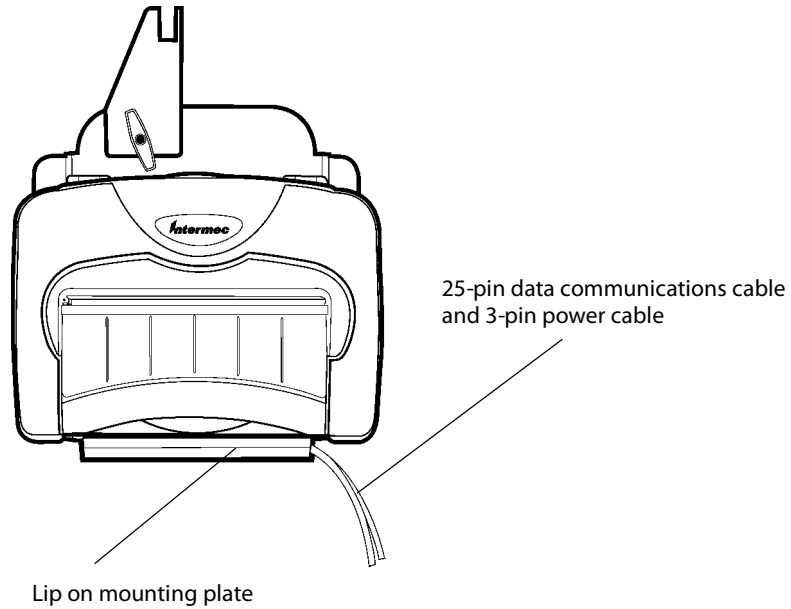
Note: There is an 11x17 foldout in the back of these instructions with a drill template for the mounting plate. You can use this template to mark the center punch locations for the mounting holes of the mounting plate.

The Fixed Mount Printer can hang attached to a mounting plate, which hangs on the wall of a vehicle. An area of 14.25" x 10" x 4.75" (36.20 x 25.40 x 12.07 cm) would be required. Be sure to leave enough room beneath the printer and mounting plate for a box of paper to fit between the printer and mounting plate and the floor. Allow for 6" (15.24 cm) above the mounting plate to swing the latch mechanism up and down and to open the printer lid.

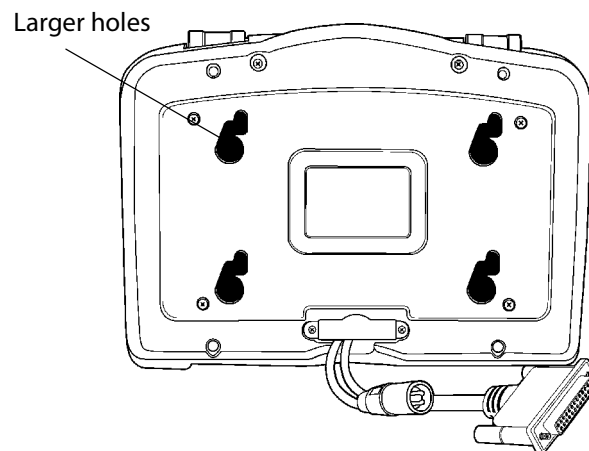
- 1 Align the mounting plate onto the wall, then use four or six 1/4-20 screws to secure the mounting plate to the wall of the vehicle through the outer mounting holes. *Note that the length of these screws may vary based on your installation needs.*
- 2 Turn the knob on the latch mechanism counterclockwise to loosen the bracket, then swing it up counterclockwise for the printer.
- 3 Align the printer onto the mounting studs on the mounting plate (*in black in the following illustration*).



- 4 Position the printer with the data communications cable and the power cable over the lip on the mounting plate. Place the cables into the lip on the plate and draw the cables out the right-hand side as shown below.

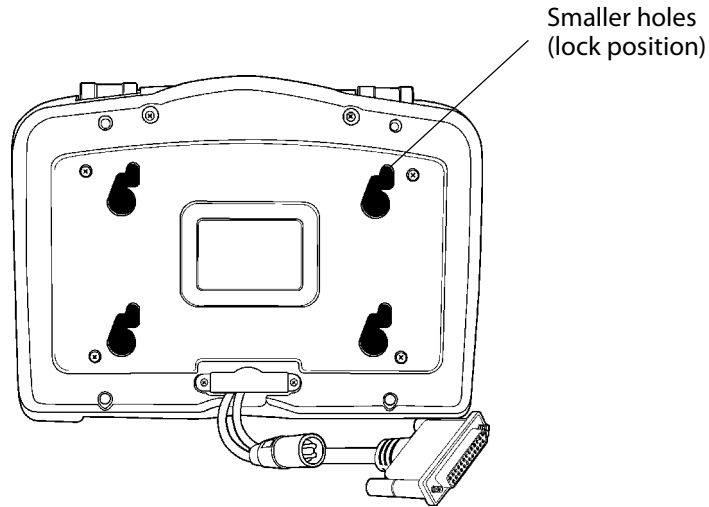


- 5 Use the four slots on the back of the printer to align the larger holes on the printer against the studs on the mounting plate. The printer should be about 1.25" (3.18 cm) above the lip on the mounting plate when the studs and the larger holes are aligned.

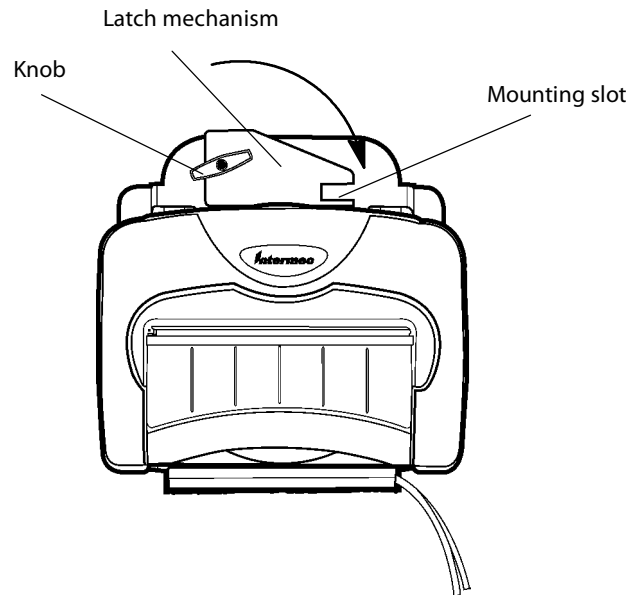


- 6 Pull the printer down and to the left *away from the latch mechanism*. You want to move the printer so that the studs on the mounting plate go into the smaller holes to lock in the printer.

To remove the printer from the mounting plate, grab both sides of the printer, then push the printer to the right and up towards the latch mechanism. You want to move the printer so that the studs on the mounting plate go into the larger holes in the printer before you can pull the printer off the mounting plate.



- 7 Swing the latch mechanism clockwise onto the printer. The printer is secure when the latch drops into the mounting slot near the edge of the mounting plate. Push the latch toward the printer and turn the knob clockwise to tighten the latch onto the printer.



- 8 If you want to secure the printer to the mounting plate, open the lid upward and use four 1/4-20 screws to secure the printer through mounting holes indicated in the previous illustration. *Note that the length of these screws may vary based with your installation needs. A screw-captivating or magnetic screwdriver is recommended.*

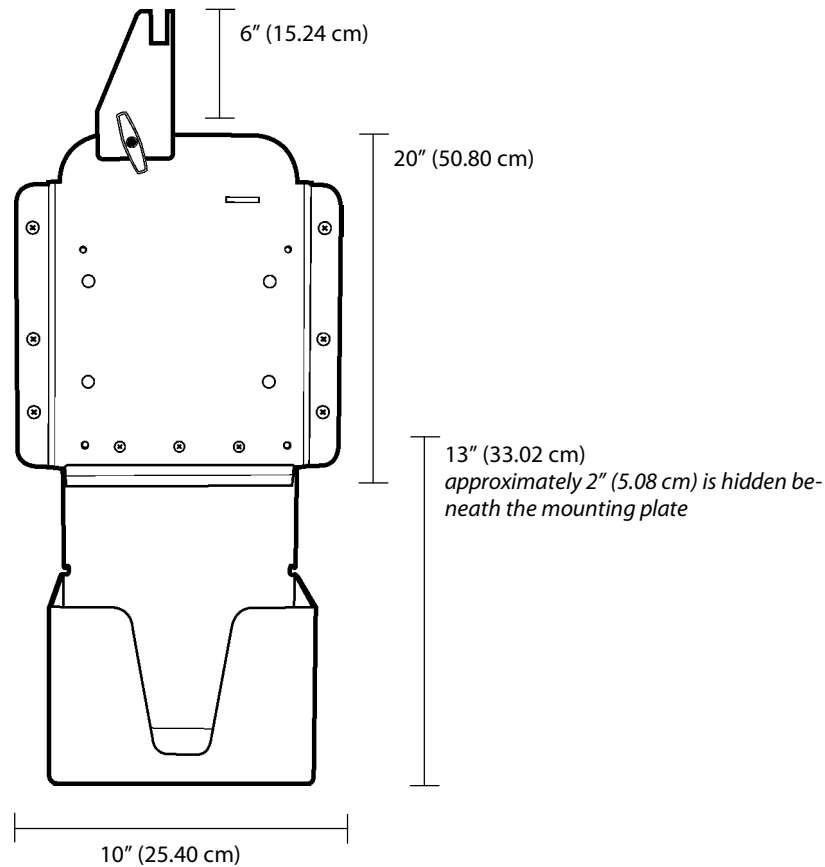


Attach a Compact Paper Tray

Note: If you are using a flat paper tray with your mounting plate and printer, you need to attach the paper tray to the mounting plate *before* you attach the printer.

A minimum area of 13.5" x 31" x 7" (34.29 x 78.74 x 17.78 cm) is required for the mounting plate, the Fixed Mount Printer, and the optional compact paper tray. Allow for 6" (15.24 cm) above the mounting plate to swing the latch mechanism up and down.

- 1 Align the mounting plate over the paper tray, then use three 1/4-20 screws to secure the two pieces together.
- 2 Position the combined mounting plate and flat paper tray onto the vehicle wall and use four to six 1/4-20 screws to secure the combined pieces to the wall of the vehicle through the outer mounting holes. *Note that the length of these screws may vary based on your installation needs..*



This illustration shows the mounting dimensions of the mounting plate with the optional compact paper tray attached. Note that the mounting holes used in this assembly contain Xs to denote the 20-1/4 screws.

Attach to a Dashboard Mount



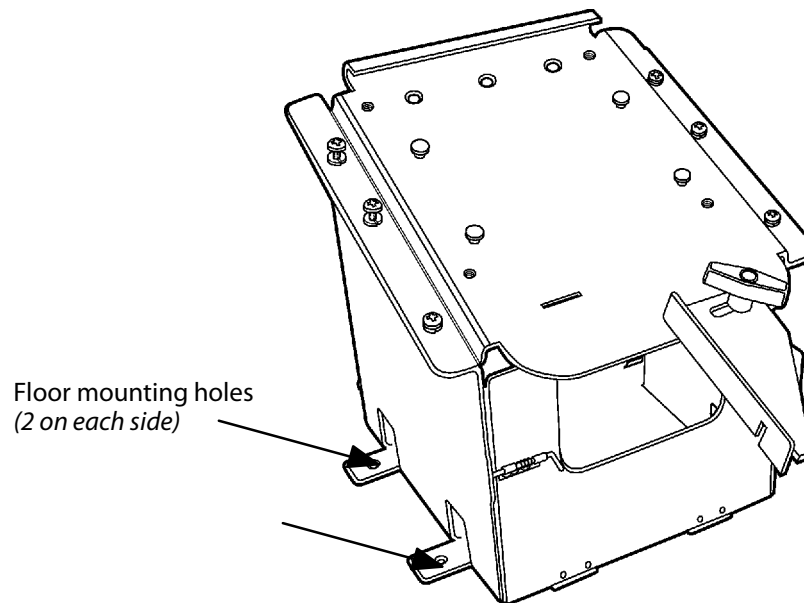
Note: There is an 11x17 foldout in the back of these instructions with a drill template for the dashboard mount. You can use this template to mark the center punch locations for the mounting holes of the dashboard mount.

A minimum area of 19" x 24" x 25" (48.26 x 60.96 x 64.50 cm) is required for the Dashboard Mount, the Fixed Mount Printer, and the optional 700 Series Computer Vehicle Dock. This allows for room to open both the printer lid and the front door of the dashboard mount.

Attach the Dashboard Mount to the Vehicle

You need four bolts to adhere the dashboard mount to the floor of your vehicle. *Note that the length of these screws may vary based on your installation needs.*

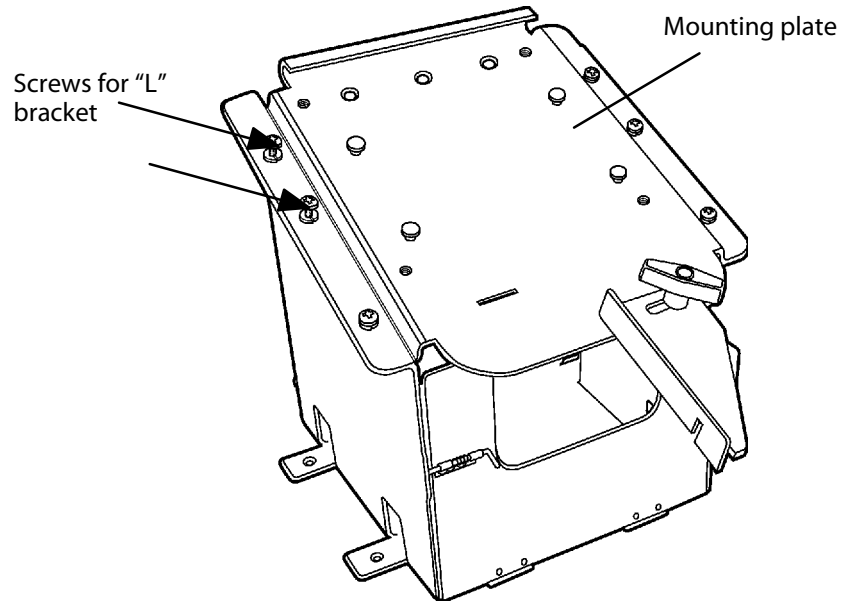
- 1 Pick an area 14.5" (36.83 cm) by 12.5" (31.75 cm) area on the floor of your vehicle.
- 2 Using the 11x17 drill template provided in the back of these instructions and the appropriate drill, drill four 1/4" (0.64 cm) holes in the floor.
- 3 Align the four outside screw holes on the dashboard mount with the holes in the floor. Insert and tighten the four locking bolts.



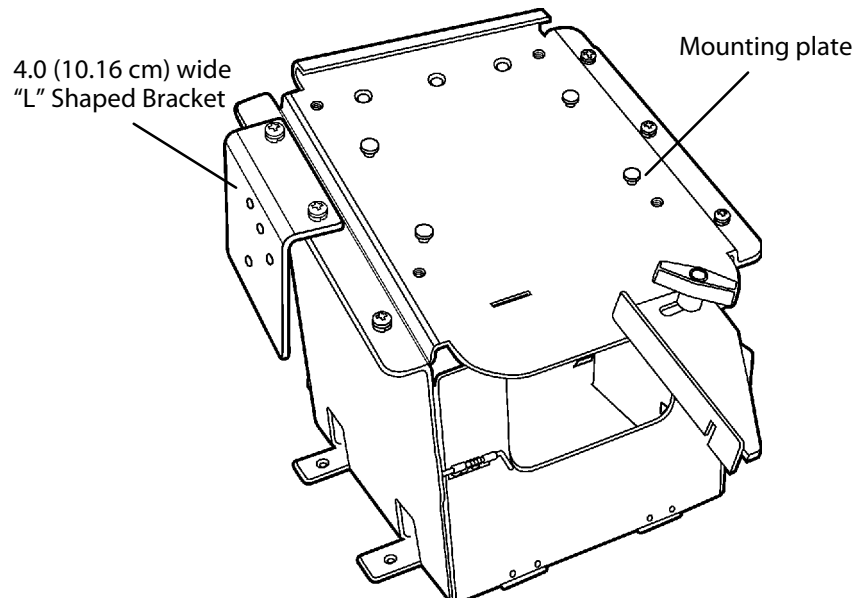
Attach a Dock Bracket and 700 Series Vehicle Dock (optional)

The 700 Series Vehicle Dock fits on either side of the dashboard mount. The brackets needed to add the vehicle dock to the dashboard mount are in a separate kit. Contact your Intermec Representative for information. If you are not attaching a vehicle dock, go to page 25.

- 1 Unscrew and remove the top two screws from the mounting plate on your dashboard mount from either side. *Keep these screws as you will need them for the next step.*



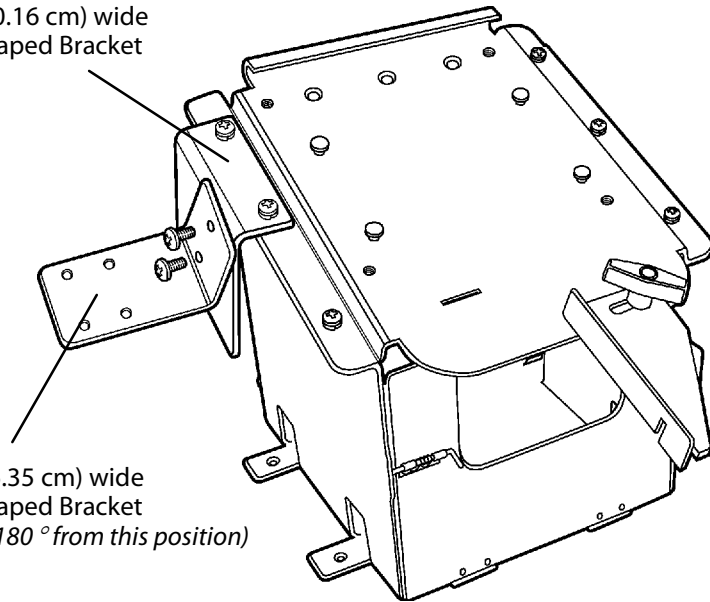
- 2 Align the holes in the 4.0" (10.16 cm) wide "L" shaped bracket to the holes in the mounting plate, then use the screws removed in step 1 to secure the bracket to the mounting plate.



- 3 Take the 2.5" (6.35 cm) wide "L" shaped bracket and align its two holes against any two holes on the 4.0" (10.25 cm) wide bracket. Note that the 4.0" wide bracket has several holes to allow you to find a position that is most comfortable for your usage. *Note that the 2.5" bracket may be turned 180° and mounted for added height.* Attach the 2.5" wide bracket with two screws.

4.0 (10.16 cm) wide
"L" Shaped Bracket

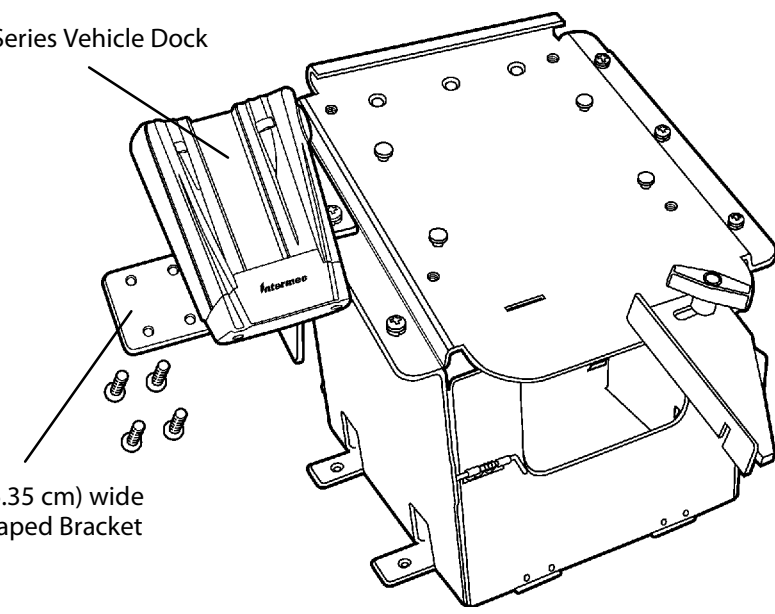
2.5" (6.35 cm) wide
"L" Shaped Bracket
(or at 180° from this position)



- 4 Using four screws, attach the 700 Series Vehicle Dock to the 2.5" (6.35 cm) "L" shaped bracket.

700 Series Vehicle Dock

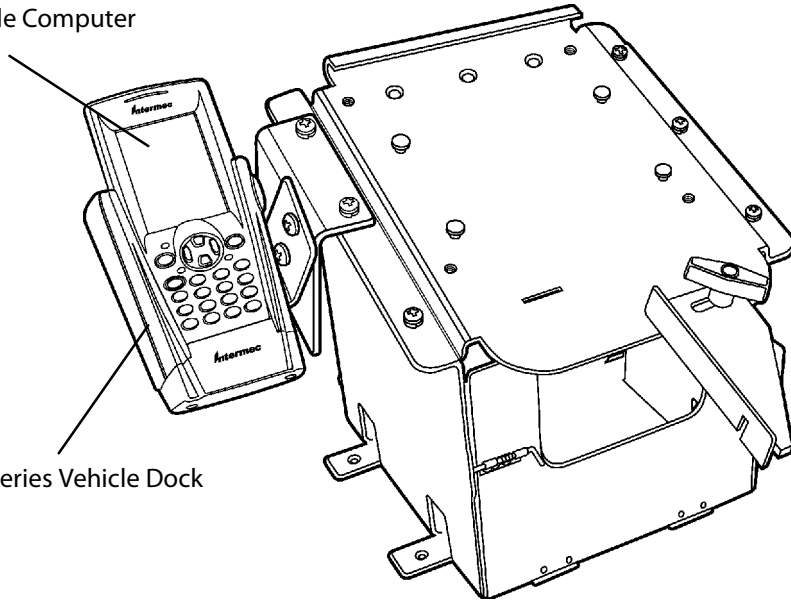
2.5" (6.35 cm) wide
"L" Shaped Bracket



5 Insert your 700 Series Mobile Computer into the 700 Series Vehicle Dock. *This illustration shows a 700 Series Color Mobile Computer.*

700 Series Color
Mobile Computer

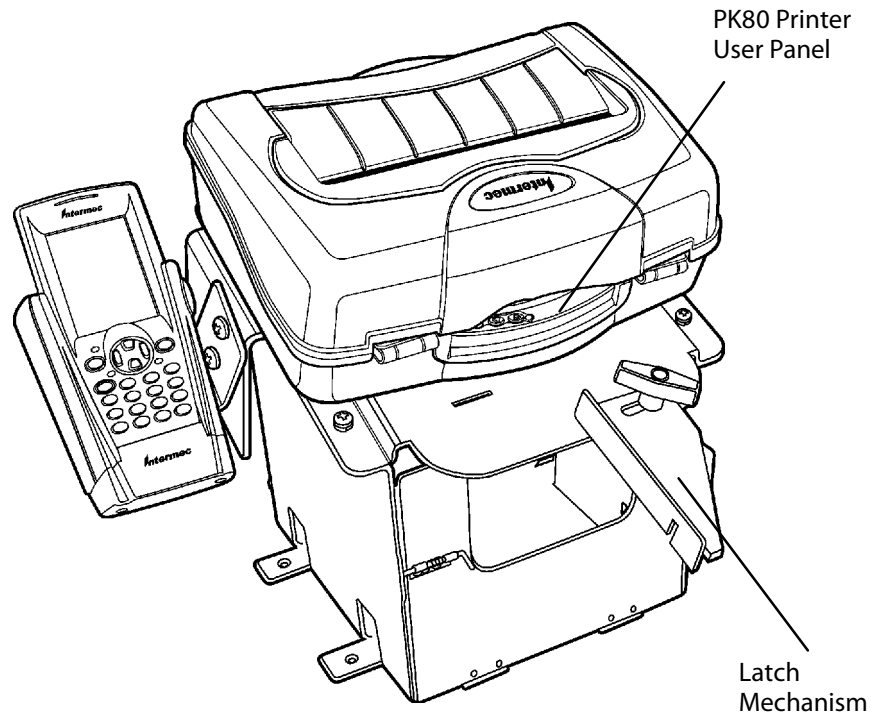
700 Series Vehicle Dock



Attach the Fixed Mount Printer

Do the following to attach the PK80 80-Column Fixed Mount Printer:

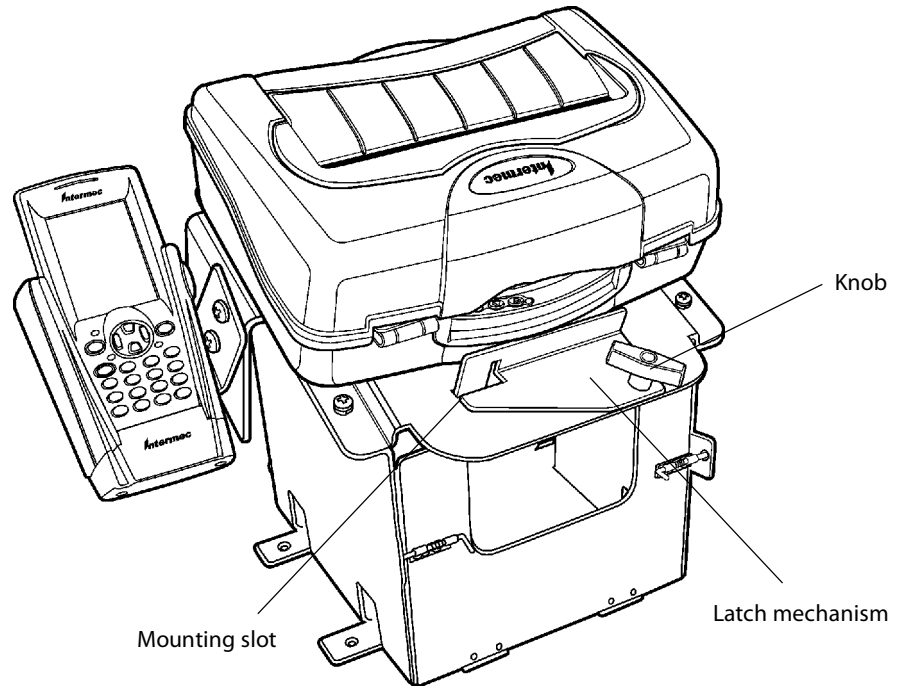
- 1 Position your PK80 Printer with the user panel facing the latch mechanism on the mounting plate and the cables on the same side as the lip on the mounting plate.



- 2 Use the four slots on the back of the printer to align the larger holes on the printer against the studs on the mounting plate. The printer should be about 1.25" (3.18 cm) above the lip on the mounting plate when the studs and the larger holes are aligned.
- 3 Pull the printer up and to the right *away from the latch mechanism*. You want to move the printer so that the studs on the mounting plate go into the smaller holes to lock in the printer.

- 4 Swing the latch mechanism clockwise onto the printer. The printer is secure when the latch drops into the mounting slot near the edge of the mounting plate. Push the latch toward the printer and turn the knob clockwise to tighten the latch onto the printer.

To remove the printer from the mounting plate, grab both sides of the printer, then push the printer to the left and down towards the latch mechanism. You want to move the printer so that the studs on the mounting plate go into the larger holes in the printer before you can pull the printer off the mounting plate.



Load the Paper into the Dashboard Mount

See the *PK80F 80-Column Printer Quick Start Guide* for information on loading paper into the dashboard mount.

Related Publications

To order printed versions of the Intermecc manuals, contact your local Intermecc representative or distributor. Following are related Intermecc manuals and part numbers (P/N):

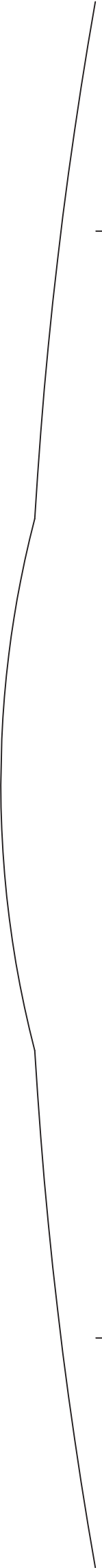
- *PK80 Series 80-Column Printer User's Manual*
(P/N: 961-018-004)
Includes instructions on installing the printer in a vehicle and connecting to a vehicle battery.
- *PK80F 80-Column Printer Quick Start Guide*
(P/N: 962-018-021)
Introduces the PK80F 80-Column Printer, includes configuration information. *Note that this is included with your printer.*



Drill Template for PK80F Printer



Front Edge of Printer



Curled Edge of Mounting Plate

12.046



3.000



4.625



Ø0.270
X 6



Drill Template for Mounting Plate





$\phi 0.270$

X 4

6.291

Drill Template for Dashboard Mount



12.360

Front Edge of Dashboard Mount



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Everett, Washington 98203
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fax 425.355.9551
www.intermec.com

PK80 Series 80-Column Printer Installation Instructions — March 2003



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