

Section 4

Vehicle Installation



Vehicle Dock Installation

The vehicle dock and associated electrical wiring should be installed under the supervision of properly trained and qualified personnel. Follow these installation instructions closely to ensure safe, reliable performance of the computer and any peripheral devices (such as a printer) that may also be installed in the vehicle.

The vehicle electrical system must be in excellent condition. This means the charging circuit must work properly and vehicle-generated electrical “noise” must be minimized and within specifications.

The charging circuit must neither undercharge nor overcharge the vehicle battery. Either fault condition in the vehicle electrical system can cause a no-charge condition in the terminal battery, and printer battery too, if one is installed in the vehicle. In general, the vehicle battery voltage should read approximately 13.0 V dc with the engine *off*, and should rise slightly with the motor running.

Excess electrical noise can be severe enough to defeat the electrical filtering that is built into printers and terminals made by Intermec Technologies Corporation. Defective ignition wiring, damaged insulation, or a faulty vehicle electrical component can cause electrical noise. When this happens, computers and printers can behave unpredictably.

The gray battery cable (P/N: 206-953-009 or 216-964-009) must be connected in strict accordance with the instructions in this manual.

Tools Required

- Wire Crimping and stripping tool
- Electric drill, drill bits (3/16" and 9/16")
- Common hand tools

Installation Procedures

1. Electrical installation (battery cable)
2. Mechanical installation (terminal, peripherals)
3. Final assembly and cable connection

Parts and Accessory List, kits: 203-344-001/002

Kit #	Description	P/N	Qty
-001	dc power cable (6 ft.)	206-951-001	1
-002	"Y" power cable	216-817-001	1
-001	battery cable	206-953-009	1
-002	battery cable (with filter)	216-964-009	1
-001/-002	fuse link	216-657-001	1
-001/-002	bolt, 3/8" X 1-1/2"	800-099-001	2
-001/-002	washer, 3/8"	803-099-001	4
-001/-002	nut, 3/8"	802-099-001	4
-001/-002	adjustable clamp	808-011-001	8
-001/-002	self-tap screw #6 X 5/8"	800-008-001	8
-001/-002	3/8" terminal ring	809-165-001	1
-001/-002	self-tap screw #8 X 5/8"	800-012-000	1
-001/-002	#8 flat washer	803-084-000	1
-001/-002	snap-in bushing	807-065-003	1
-001/-002	remote terminal cable (6')	216-588-001	ref.*

**Reference items not included in kit. Order separately.*

Introduction to Vehicle Installation

The vehicle installation kit allows you to wire the vehicle dock in a delivery vehicle. Optional cables are available to mount the dock *and* a printer nearby in the same vehicle. When the installation is complete, you will have a secure place to store the terminal between stops. In addition, the vehicle electrical system provides power to recharge the computer and to operate a printer if one is installed.

During this installation, the power cable is wired directly to the vehicle battery. This direct connection reduces the chance of installation problems. It also takes advantage of the natural filtering and regulating characteristics of the vehicle battery.

Since each situation or equipment type may pose unique requirements, mounting hardware selection and mechanical installation shall be the responsibility of the installer. Use nuts, bolts, and lockwashers for installing the mount (adjustable swivel or fixed) for the dock: the mount is predrilled with 3/16-inch holes.

This kit contains nuts, bolts, washers, a terminal ring, and a fuse link for connecting the battery cable *directly* to the vehicle battery. It also contains adjustable wire clamps to secure the cable in place. A dock mounting bracket may be part of this kit, or it may be a separate assembly, depending on your company's requirements.

Your tasks are to:

- route and install the battery cable
- mechanically install the mount
- connect short cable(s)

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

Power Cable Routing

Cable Length

Remember that a shorter dc power cable connects the vehicle dock to the battery cable. This extends the overall cable length and must be considered as you begin the installation.

When Installing a Printer

If you are installing a printer at the same time, a special “Y” (power) cable *and* a remote terminal cable are required. These cables allow you to locate the printer and the vehicle dock up to six feet apart. The battery cable for printers contains a built-in filter assembly.

Cable installation

Follow the guidelines (below) and other instructions closely when installing the battery cable.

Guidelines

- ▶ Completely install the battery cable *before* connecting the dock.
- ▶ Route the battery cable *from* the general area where the unit(s) will be mounted. Work *toward* the vehicle battery.
- ▶ Use a snap-in bushing (requires 9/16” hole) if the battery cable passes through the firewall or other sheet-metal.
- ▶ Make sure that cable routing does not interfere with other equipment or vehicle controls.
- ▶ Make sure that cable routing does not invite damage to the cable itself.
- ▶ Secure the battery cable at least every 18 inches throughout the cable run: use adjustable clamps (provided) or wire-tie to existing vehicle cable runs.

Battery Cable Connections

Battery Cable Completion

You must cut the cable to length, cut off a portion of the outer cable jacket and strip the individual wire ends of the cable. (Note: you may end up shortening, and restripping, the red wire when attaching the fuse link). Then, you must install a preassembled in-line fuse link in series with the red wire and install a terminal ring on the black wire. Finally, you must complete the connections to the vehicle battery.

Cut and Strip the Battery Cable

1. Cut the gray battery cable near the battery.
2. Strip the cable jacket back 12–14 inches.
3. Strip 1/4" of insulation from the black wire.

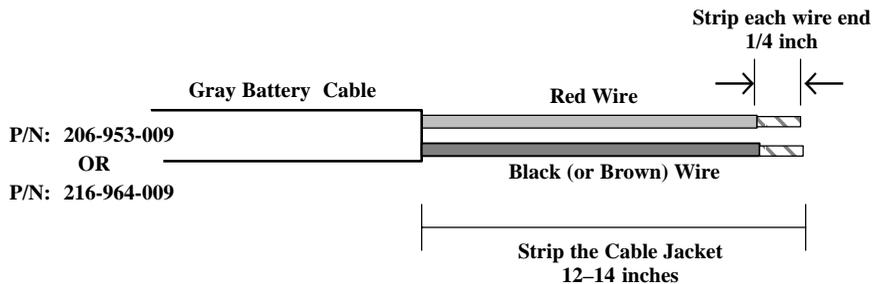


Figure 4-1
Strip the Battery Cable

Prepare the Cable Ends

1. Strip the black wire.
2. Crimp the 3/8" terminal ring (1) onto the black wire.
3. Locate the fuse link (2): it attaches to the red wire.
4. Shorten the red wire if desired.
5. Then, strip 1/4" of insulation from the red wire.
6. Securely crimp the fuse link splice (3) onto the red wire.

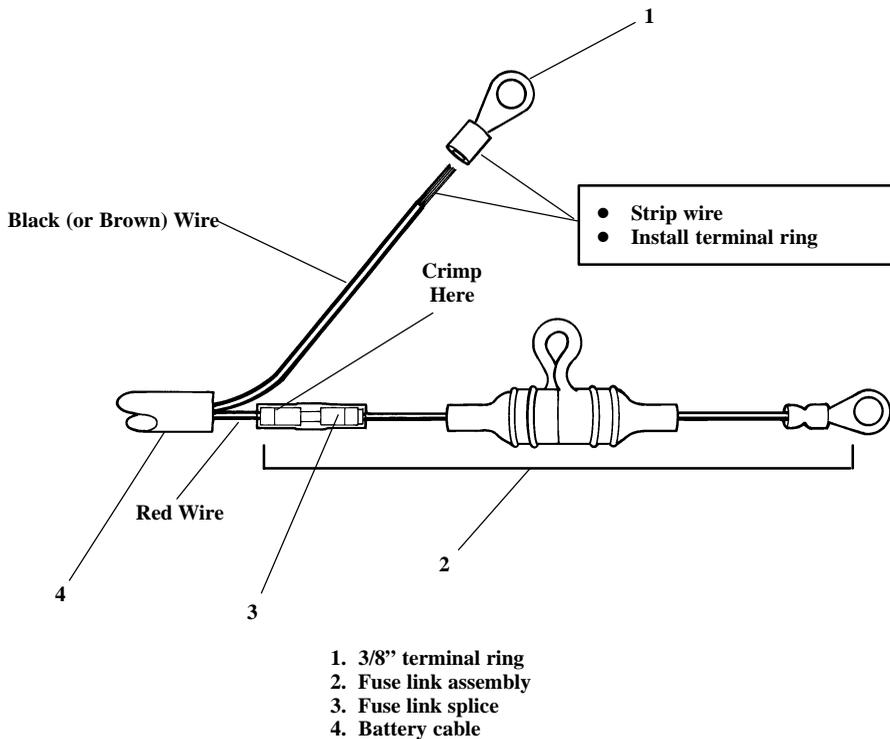
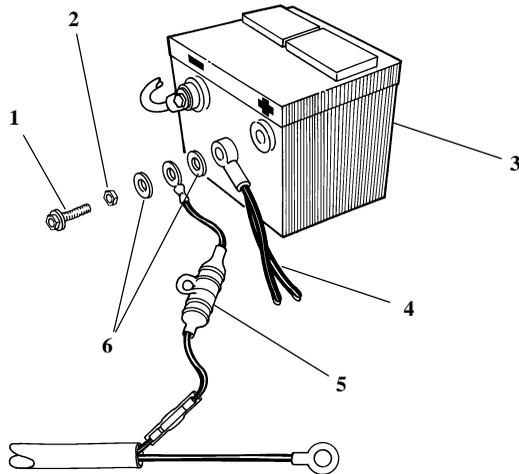


Figure 4-2
Prepare Cable Ends

Connection to Side-mounted Terminals

1. Remove both battery terminal screws from the vehicle battery.
2. Screw a 3/8" nut (2) as far as it will go onto a 3/8" X 1-1/2" bolt (1) furnished in kit.
3. Slip a 3/8" washer (6) onto the bolt.
4. Slide the *positive* (red wire with fuse link (5)) terminal ring from the battery cable onto the positive (+) battery terminal bolt.
5. Slip a second 3/8" washer (6) onto the bolt.
6. Slide the vehicle *positive* battery cable (4) onto the bolt.
7. Thread the bolt assembly (steps 1–6, above) into the positive battery terminal. Tighten the bolt securely.
8. Tighten the nut (2) installed in step #2 to secure washers (6) and cables firmly in place.

Repeat steps #2 thru #8 for the negative wire (black or brown) from the battery cable, hooking up the negative cables to the negative (-) battery terminal.



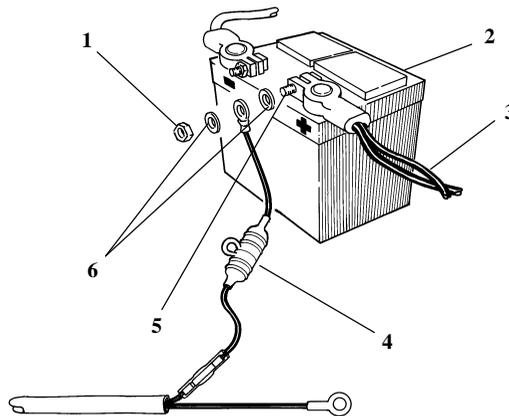
1. Bolt
2. Nut
3. Vehicle battery
4. Vehicle battery cable
5. Fuse link
6. Washers

Figure 4-3
Side-mount Battery Terminals

Connection to Top-mounted Terminals

1. Remove the bolts from the vehicle battery terminals.
2. Replace the bolts removed in step #1 with 3/8" X 1-1/2" bolts (5) and nuts (1) furnished in the installation kit. Tighten nuts securely.
3. Slip a 3/8" washer (6) onto the extended end of each bolt.
4. Slide the *positive* (fuse link with red wire (4)) terminal ring from the battery cable onto the positive (+) battery bolt (5).
5. Slip a second 3/8" washer (6) onto that bolt (5).
6. Thread a second 3/8" nut (1) onto that bolt (5). Tighten the nut.

Repeat steps #3 thru #6 for the negative wire (black or brown) from the Norand battery cable, connecting the wire to the negative (-) battery terminal.



1. 3/8" nut
2. Vehicle battery
3. Vehicle battery cable
4. Fuse link
5. 3/8" X 1-1/2" bolt
6. 3/8" washers

Figure 4-4
Top-mount Battery Terminals

Secure the Power Cable

Secure the battery cable every 18 inches with adjustable cable clamps. Work from the battery, toward the mounting area for the dock. 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.

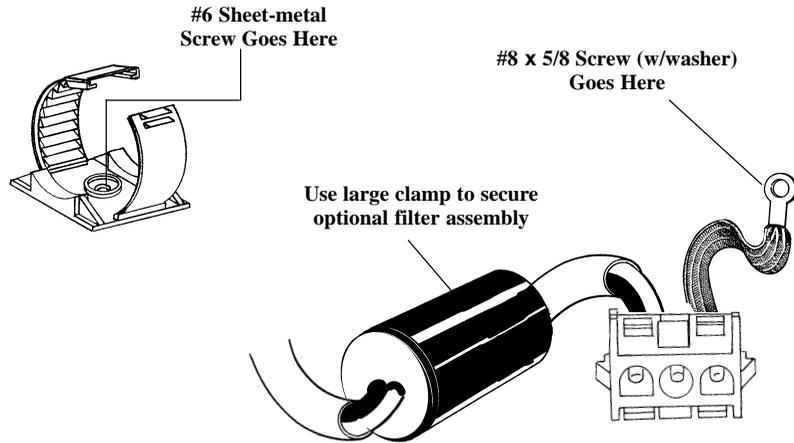


Figure 4-5
Secure Cable

Fasten Ground Cable

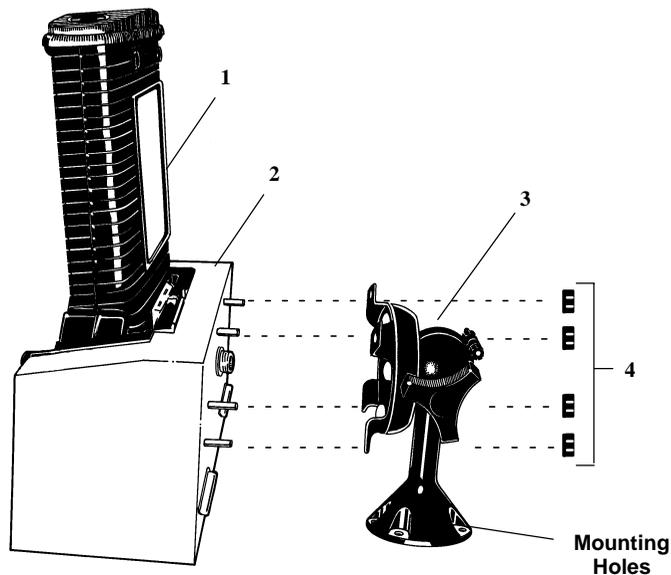
The power cable connector has a ground strap (or wire) that must be fastened to vehicle sheet-metal to ensure proper cable shielding. Follow the steps below to fasten this ground strap:

1. Drill a small hole where you intend to fasten the ground strap.
2. Use a punch to dimple and enlarge the hole.
(Do not make hole too big for the screw.)
3. Scrape a small circle of paint from around the hole.
4. Use a #8 X 5/8" screw and flat washer to secure the strap.

Mechanical Installation

Be sure to allow clearance for the combined terminal, dock and mounting assembly before proceeding. The terminal protrudes above the dock, requiring vertical clearance. Additional clearance is required for inserting or removing the terminal from the dock.

Use the base of the mount as a template and mark the hole locations on the sheet-metal where you are installing the dock. Use a 3/16-inch drill bit to make the holes. Secure the mount with nuts, bolts, and lockwashers. *This hardware is not furnished in the installation kit and must be purchased locally.* Use four #8 self-locking nuts (which *are* furnished) to fasten the Vehicle Dock to the mount.



1. 6300 SERIES terminal
2. Vehicle Dock
3. Adjustable Swivel Mount
4. #8 self-locking nuts

Figure 4-6
Adjustable Mount and Dock

Final Connections

Vehicle Dock Alone

If you are installing the Vehicle Dock by itself, you must connect one end of the dc Power Cable (P/N: 206-951-001) to the Vehicle Dock: the other end plugs into the battery cable which you installed in the preceding steps.

Vehicle Dock and Printer

If you are installing a printer in the vehicle, you must install a “Y” cable (P/N: 216-817-001) to supply power to both the Vehicle Dock and to the printer. Plug one end of this cable into the printer, the other into the Vehicle Dock. The rectangular connector plugs into the battery cable.

You must also connect a “Remote Terminal Cable” between the Vehicle Dock and the printer: this cable allows the terminal to “talk” to the printer. Plug the appropriate end of this cable into the Vehicle Dock and the other end into the printer.

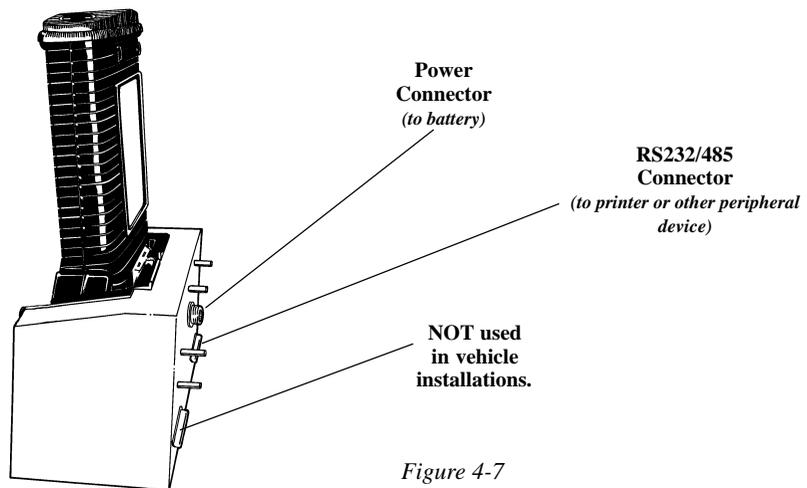
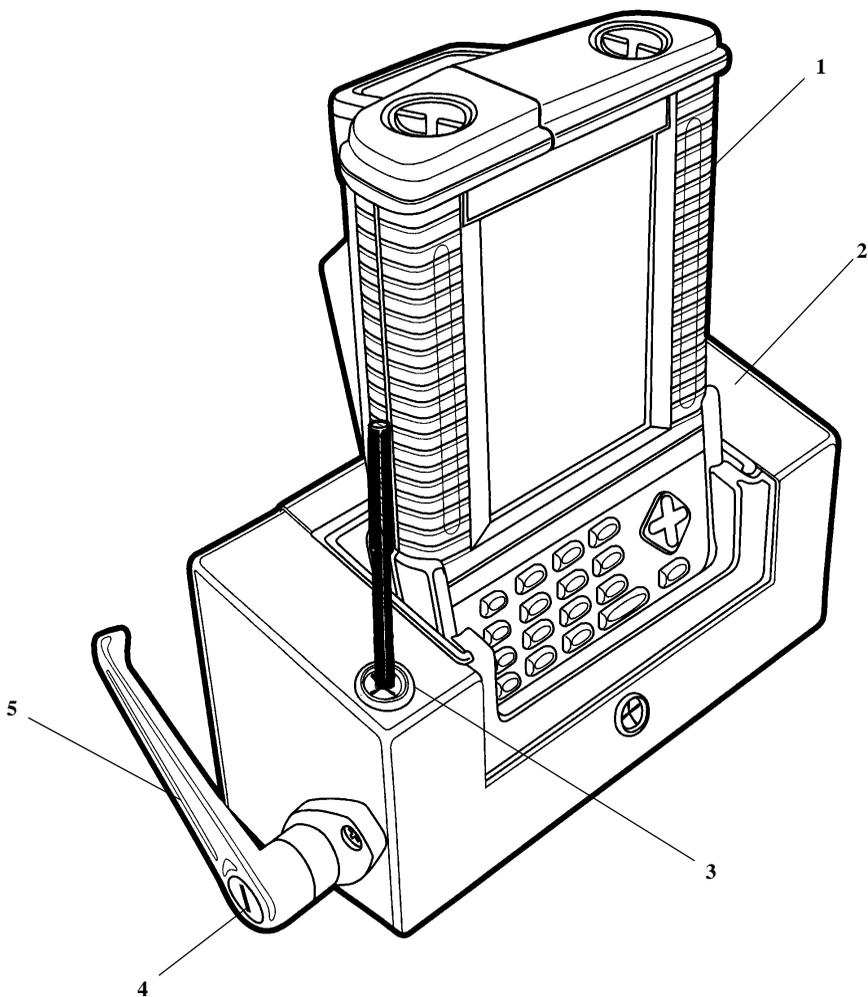


Figure 4-7
Dock Connections



1. Model 6300 SERIES Hand-Held Computer
2. Dock
3. Pen holder
4. Key lock
5. Latching lever

*Figure 4-8
Terminal in Vehicle Dock*

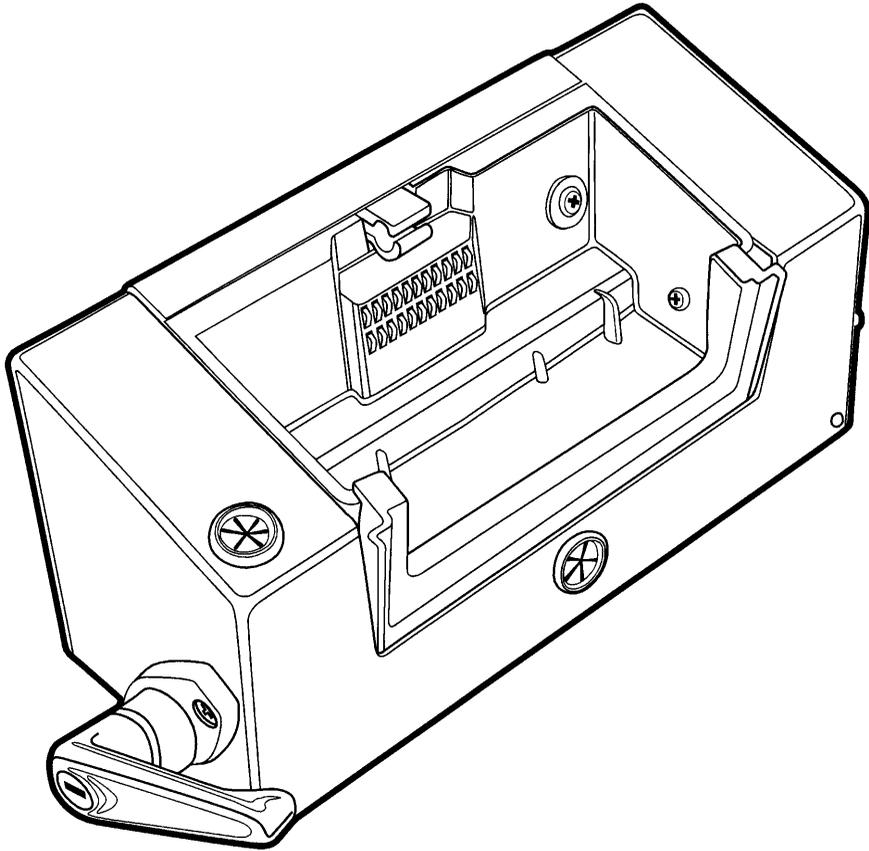


Figure 4-9
Vehicle Dock
(handle shown in released position)

