Intermec
Technologies Corporation

4820 Printer

USER'S GUIDE

Acknowledgments

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B **CAUTION:**   **Intermec Technologies Corporation suggests you buy cables from us to connect with other devices. Our cables are safe, meet FCC rules, and suit our products. Other cables may not be tested. They may cause problems from electrostatic discharge or induced energy. Our warranties do not cover loss, injury, or damage from other cables.**

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Section 1

Introduction

" "

The 4820 Printer is used in the route accounting industry to produce high-quality customer invoices, receipts, load reports, transfers, and other documents. A unique "sleep" feature saves energy when the printer is not printing, eliminating the ON/OFF switch. Data input is normally provided by hand-held computers.

About this Guide

This user guide is developed for end-users and installers of the 4820 Printer.

" **Section 1 Introduction**
Describes printer types and equipment, accessories, power options, specifications, and customer support.

" **Section 2 Installation**
Includes instructions on installing the printer in a vehicle and connecting to a vehicle battery.

" **Section 3 Operation**
Provides instructions on set up and printer operations.

" **Section 4 Maintenance**
Contains general cleaning tips, tips on changing the ribbon cartridge, and cleaning the mask spring.

" **Section 5 Troubleshooting**
Provides diagnostic tips you can use to troubleshoot any printer problems that may occur. Connector pin-out information is also in this section.

Printer Descriptions

Below are the three most common printer configurations:

- **Fixed Mount Printer**
  The fixed mount printer is mounted in motor vehicles or used in a settlement room environment. The terminal holder may be mounted on the printer or a remote dock can connect to the side of the printer. A deep paper tray, which holds up to 200 3-ply forms (about 2" or 5 cm thick) is under the printer mechanism.

- **Portable Printer**
  The portable printer has a handle so that you can carry it. An optional internal battery permits operation without the use of an external power source. The terminal holder is an integral part of this printer. A shallow paper tray, which holds up to 50 3-ply forms (about an inch or 2.5 cm thick) is under the printer mechanism.

- **Wall Mount Printer**
  The wall mount printer hangs on a mounting plate secured to a wall. Computers communicate with this printer *only* through the remote terminal holder or vehicle dock. There is no internal paper tray, thus paper is loaded from a separate compact or flat paper tray (which holds up to 2.5" or 6 cm of paper) or a box. The printer mechanism is permanently attached. The wall mount printer cover is hinged to the printer. These hinges have a tension screw (turn clockwise to tighten, turn counterclockwise to loosen), should you need to adjust them.
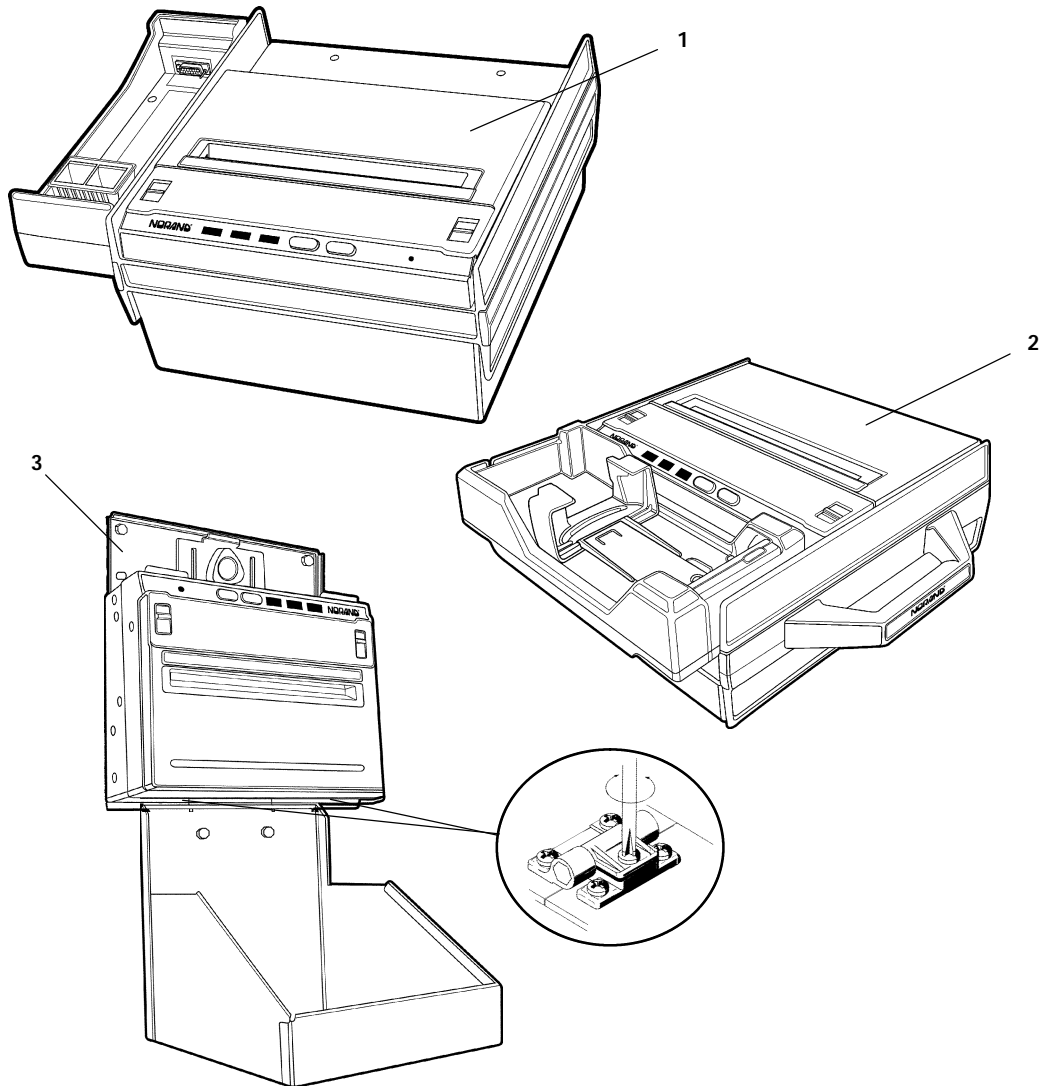
1. **Fixed mount printer** *(with 4000 Series/62XX Terminal Holder)*
2. **Portable printer** *(with 61XX Terminal Holder)*
3. **Wall mount printer** *(with mounting plate, flat paper tray, and cover hinge tension adjustment)*

Figure 1-1
4820 Printers

Connectors

Each printer has a dc power jack that connects the printer to a power source, such as the vehicle battery or an external power supply.

Each printer communicates with a hand-held computer through the 25-pin data communications connector (wall mount printer) or 15-pin connector socket (in terminal holder, remote terminal holder, or vehicle dock).

" **Fixed Mount Printer**
The dc power connector is on the bottom rear of the printer behind the printer terminal holder.

The data communication connector (15-pin socket), is in either the printer terminal holder or a separate vehicle dock.

" **Portable Printer**
The dc power connector is found on the side of the printer, beneath the printer terminal holder.

The data communications connector (15-pin socket) is either in the printer terminal holder or a separate vehicle dock.

" **Wall Mount Printer**
The dc power connector is on the bottom left of the printer.

The data communications connector (25-pin socket) is on the bottom right of the printer.

Fixed Mount Printer

Portable Printer

Wall Mount Printer
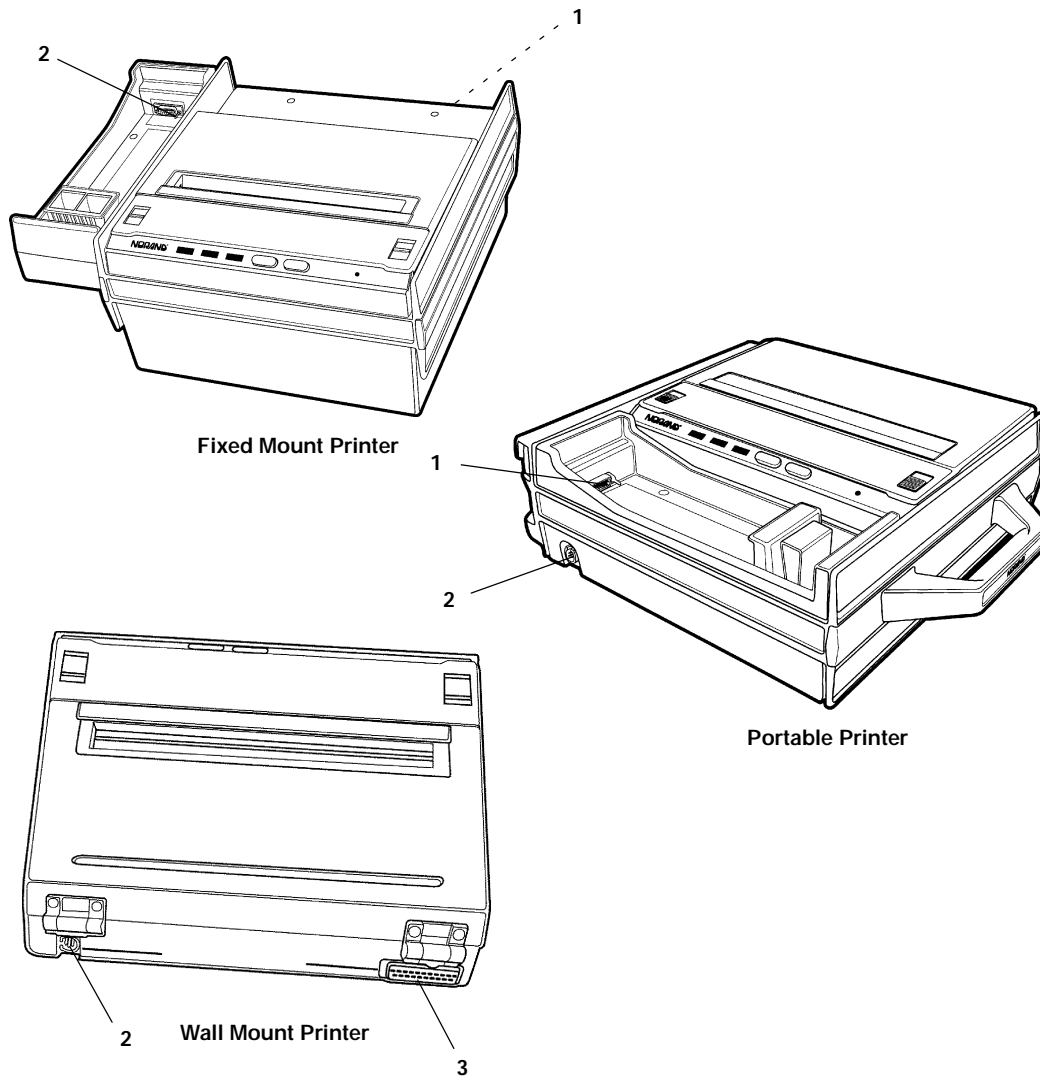
1. **15-pin connector socket**
2. **DC power connector jack**
3. **Data communications connector**

Figure 1-2
Printer Connectors

Reset Switch

Each printer has a reset switch that cold-boots the printer.

" **Fixed Mount or Portable Printer**
Both the portable printer and the fixed mount printer
have the reset switch behind the printer mechanism.

" **Wall Mount Printer**
The wall mount printer has the reset switch at the
bottom, near the data communications connector.

Wall Mount Printer

1

1

2

Fixed Mount or Portable Printer
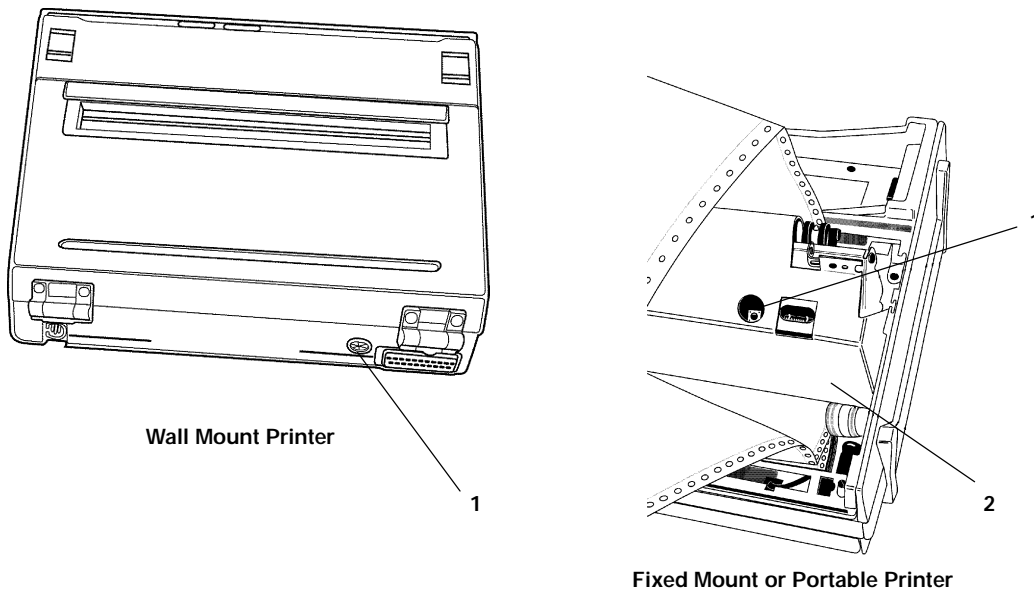
1. Reset switch
2. Printer mechanism

Figure 1-3
Reset Switch on Printers

Remote Connections

A printer and a computer, using the supplied serial cable, can operate while up to 30 feet (9 meters) apart.

Power Options

" **Internal Power Module**
The alternating current (ac) power module is an available option for fixed mount and portable printers, *not for wall mount printers,* which allows for ac operation. The power module is installed at the factory and cannot be ordered as an add-on option.

" **Internal Battery**
The internal battery allows the portable printer and some fixed mount printers to operate independently of other power sources.

" **Vehicle Battery**
A power cable provides power to the printer through a cable permanently installed in the vehicle.

" **External Power Supply**
An external power supply can be purchased to convert ac outlet voltage to the dc voltage required by the printer.

Paper

The printers work with 1–3 ply carbonless paper that is single-edge glued and designed for sprocket feed. Standard paper size is 8.5 x 11" or 8.5 x 12" (241 x 305 mm International). Use up to a maximum of 0.009 inch (0.23 mm) thick with 3-ply forms.

Control Panel

The printer control panel has four indicators and two buttons. Three of the indicators change color when there is a problem. The fourth indicator lights up when the printer is active. The two buttons adjust and align the paper. Below are the indicators and buttons on the control panel:

Indicators

- **PAPER OUT**
  The printer is out of paper.
- **HEAD JAM**
  The print head is jammed and cannot move.
- **LOW BATT**
  The internal battery voltage, the vehicle battery voltage, or the power module voltage is too low.
- **Power**
  This stays lit while the printer is in active mode. When the printer is in sleep mode, or without power, this is dark.

Buttons

- **SET TOP**
  Press this button to signal the beginning of the page to the printer after you have made the appropriate paper adjustments.
- **ADVANCE**
  Press this button to feed the paper into the printer mechanism or when the printer should advance to the next form. If the printer ran out of paper, press this button to initiate automatic paper loading.
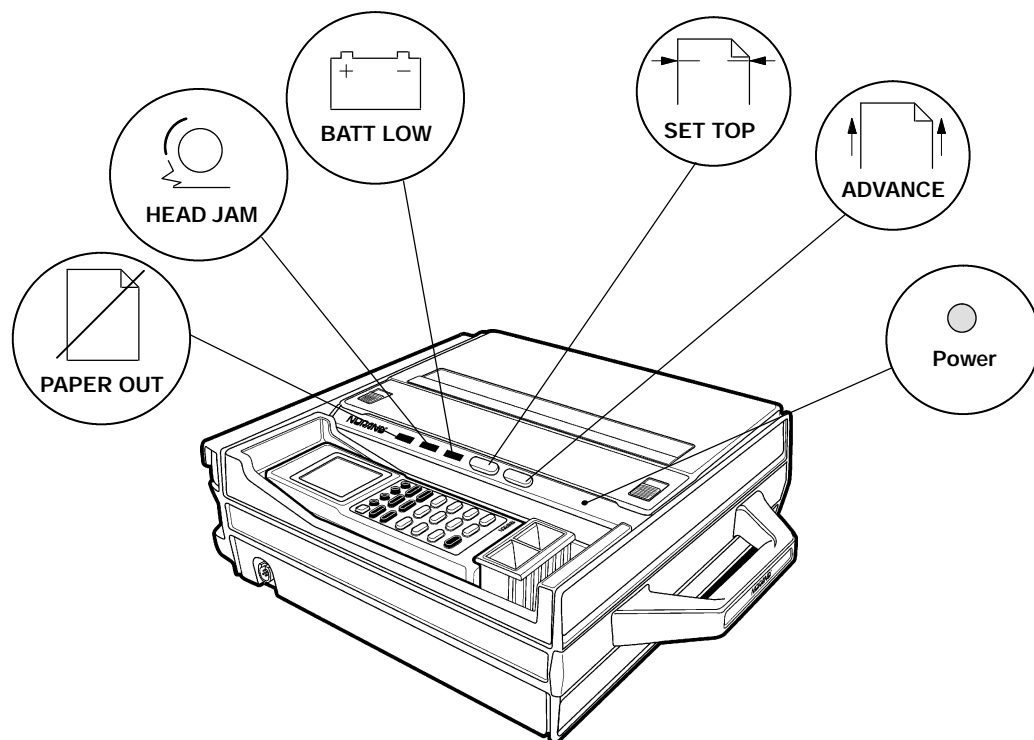
Figure 1-4
Control Panel

Specifications

" **NOTE:**	*Various print fonts do affect the print speed.*

Print Speed: 200 characters per second (cps)

Weight: 17.7 – 22.5 pounds (8 – 10.2 kg), depending on style, options, and amount of paper.

Temperature: Operating: –20 to 60 $^{\circ}$C (–4 to 140 $^{\circ}$F)
Storage: –30 to 70 $^{\circ}$C (–22 to 158 $^{\circ}$F)

Humidity: Operating: 10 to 85% noncondensing
Storage: 5 to 90% noncondensing

Altitude: Operating: –100 to 5000 meters
Storage: 15,000 meters

Electrical: Voltage: 13.2 volts dc (nominal)
Current: 3.5 amps (avg. while charging internal battery)
6 mA (sleep mode – no charge),
varies for custom configurations such as
the printer and 61XX Terminal Holders.

Vibration: 1.5 Gs RMS for six hours

ESD: 15 kV noncontact and 8 kV contact

Reliability: Four years MTBF *("MTBF" is in terms of lines and characters printed. The 4820 Mechanism durability is 200 million dots per wire in the head and 3 million lines printed.)*

Battery: Shelf life: 1 year @ 25 $^{\circ}$C (77 $^{\circ}$F)
2.3 amperes-hour
12 volt lead acid
(order batteries through Inside Sales)

Printer Dimensions

Below are the three most common printer configurations
with their dimensions (width, height, and depth):

" **Fixed Mount Printer**
The base of the fixed mount printer is 12.75" (33 cm)
wide by 14" (36 cm) front to back. The upper portion
of the printer, which may include either the 61XX or
the 62XX terminal holder, side or top mount, is:

    " ***With 61XX Terminal Holder Side Mount:***
        20.25" W   8.25" H   14.5" D
        (51.5 cm)   (21 cm)   (37 cm)

    " ***With 62XX Holder Side Mount:***
        18.5" W   8.25" H   14.5" D
        (47 cm)   (21 cm)   (37 cm)

    " ***With 61XX or 62XX Holder Top Mount:***
        14.25" W   8.25" H   16.5" D
        (36 cm)   (21 cm)   (42 cm)

" **Portable Printer**
May come with a handle, an ac foot, or with a 61XX or
62XX Terminal Holder Top Mount:

    " ***Handle and 61XX Holder Top Mount:***
        16.5" W   6.13" H   15.0" D
        (42 cm)   (15.5 cm)   (38 cm)

    " ***Handle, 62XX Holder Top Mount or Fill
      Plate:***
        16.5" W   5.13" H   15.0" D
        (42 cm)   (13 cm)   (38 cm)

    " ***With AC Foot:***
        17.5" W   5.13" H   15.0" D
        (44.5 cm)   (13 cm)   (38 cm)

" **Wall Mount Printer**
(See Section 2 for wall mount assembly dimensions)
        13.25" W   4.5" H   10.5" D
        (33.5 cm)   (11.5 cm)   (26.5 cm)

Support

If the printer has a fault that you or your company's maintenance personnel cannot correct, call the Customer Response Center. If the support person asks you to return the printer, be sure to carefully pack the printer and include a description of the problem and what steps you took to fix that problem. If possible, include any partial printout or a self-test printout that illustrates the problem.

" **NOTE:** *When sending in a wall mount printer, do not send the paper tray and mounting bracket with the printer. Detach the paper tray and mounting bracket before you box the printer.*

" **Customer Response Center**
Contact the Customer Response Center at:
1-800-221-9236 (U.S. and Canada); or
(country code) + 319-633-6149 (International).

" **Customer Support Center**
The Customer Support Center addresses are listed on a wall chart and a Product Service Information card.

" **Bulletin Board**
The Customer Support Bulletin Board Server (BBS) is a source for additional software and documentation:

" Phone number: 1-319-369-3515 (28.8 modems)

" Protocol: Full duplex, ANSI or ANSI-BBS; 300 to 28,800 bps; v.32bis; 8 bits, no parity, 1 stop bit. *For high-speed modems, disable XON/XOFF and enable RTS/CTS.*

If you are signing on for the first time, type "new" and follow the instructions. The BBS takes you through a new-user sign-up procedure.

" **NOTE:** *The Customer Support BBS File Libraries, including Hot Tips and Product Awareness Bulletins, are available on the Internet to authorized BBS users: http://norbbs.norand.com/*

" **Web Page**
Use the following URL to access the web page on the
Internet: `www.intermec.com`

Inside Sales

Contact Inside Sales at 1-800-255-6292 for these supplies:

" Ribbon cartridges with:
   " Black ribbon: P/N: 805-060-001
   " Purple ribbon: P/N: 805-060-002
" Internal battery: P/N: 317-075-001
" Cleaning solutions:
   " MICRO-CLEAN II   P/N: 901-438-001
   " GUIDE SHAFT CLEANER   P/N: 901-439-001

<div align="right">

Section 2

Installation

</div>

" "

The 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 4820 Printer.

Installation Kit

" **NOTE:**   *Vehicle power cables, at various lengths, are sold separately.*

Norand Mobile Systems Division of Intermec Technologies Corporation has these vehicle installation kits available for the printer. Below are their part numbers:

" 203-242-001   Installation Kit to Vehicle Battery (fixed mount printer)

" 203-242-002   Vehicle Battery Installation Kit (portable printer)

" 203-242-003   Fuse Block Installation Kit (ac portable printer)

These kits allow you to wire the printer and vehicle dock in a delivery vehicle. Your representative can help you decide which kit is best for your installation.

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

During the installation of the first two kits, 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 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 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 drill bits (3/16" and 9/16"); 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. The voltage should read below 14.5 V dc. *It must not exceed 15.5 V.*

" **NOTE:** *If the battery voltage exceeds 15.5 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 NORAND^R printers and vehicle docks. Defective ignition wiring, damaged insulation, or a faulty vehicle electrical component can cause electrical noise — possibly causing computers and printers to behave unpredictably.

Electrical Installation

Decide where to mount the printer and vehicle dock, then follow these instructions.

Power Cable Routing

" **Cable Length**
A shorter printer dc power cable connects the printer to the vehicle battery cable, extending the overall cable length.

" **"Y" Power Cable**
A special "Y" (power) cable *and* a remote data communications cable are required when using the 61XX, 63XX, or 66XX Computers. These cables allow you to locate the printer and the vehicle dock up to eight feet (2.4 meters) apart. The vehicle battery cable contains a built-in filter assembly.

Cable Installation

There are at least two ways to do the installation: direct-to-the-battery or to the fuse block. *The direct-to-battery method is recommended.* Follow these guidelines when installing the power cable.

Direct-to-Battery
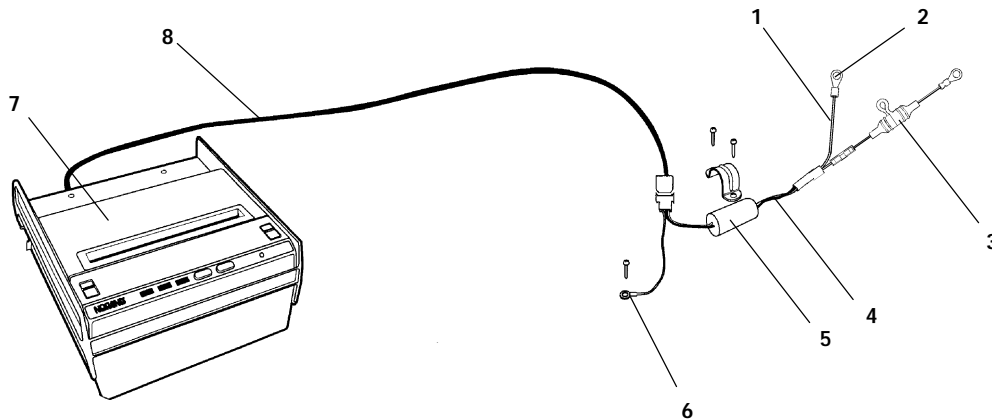
1. **Black (or brown) wire**
2. **3/8″ terminal ring**
3. **Fuse link assembly**
4. **Vehicle battery cable — 8, 16, or 22 feet (2.4, 4.9, or 6.7 meters)**
5. **Filter**
6. **Chassis ground**
7. **Fixed mount printer**
8. **Printer power cable — (4 feet or 1.2 meters — goes to printer)**

Figure 2-1
Two-Cable Installation Solution

It is recommended that you install the printer 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 power cable, you will be able to easily replace that cable.

Routing the Cables

Use the following guidelines when routing the printer 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 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.

Preparing 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:*

Stripping 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.
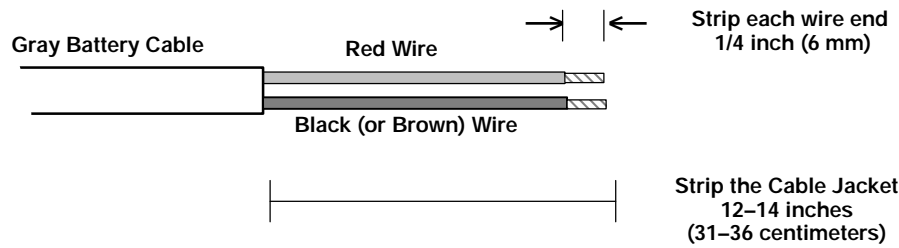
Figure 2-2
Vehicle Battery Cable Jacket

Crimping the Cable Ends

Do the following to attach a terminal ring and a preas-sembled 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 **(2)** and attach it to the red wire (shorten the red wire if desired).

4. Then, strip 1/4" (6 mm) of insulation off the red wire.

5. Securely crimp the fuse link splice **(3)** onto the red wire.

Black (or Brown) Wire

1

D	Strip wire
D	Install terminal ring

Crimp Here

4

Red Wire   **3**   **2**
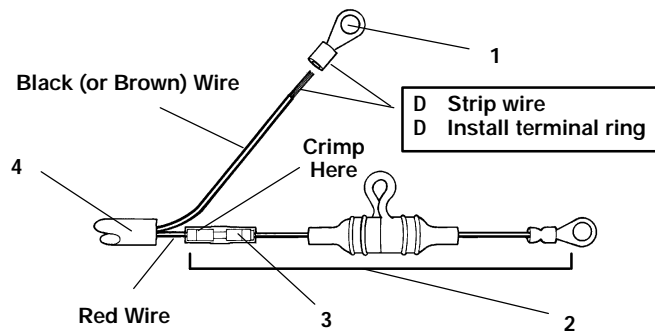
1. 3/8″ terminal ring
2. Fuse link assembly
3. Fuse link splice
4. Vehicle battery cable

Figure 2-3
Vehicle Battery Cable Ends

Connecting to the Vehicle Battery

Your vehicle would have either a top-mount battery with its bolts on the top; or a side-mount battery with its bolts on the side. Determine which battery is in your vehicle and proceed with the following applicable instructions:
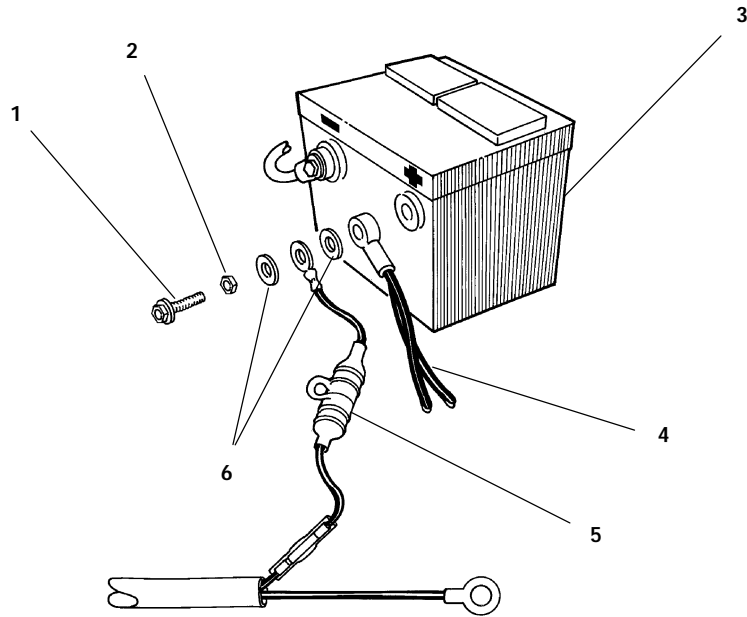
Connecting to Side-Mount Battery Terminals

Do the following to attach the vehicle battery cable to a side-mount battery terminal:

1. Disconnect the *negative* battery terminal cable.

2. Remove both battery terminal screws from the vehicle 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 **(6)** onto the bolt.

5. Slide the *positive* (red wire with fuse link **(5)**) terminal ring from the vehicle battery cable onto the positive (+) battery terminal bolt.

6. Slip a second 3/8" washer **(6),** then slip the vehicle *positive* battery cable **(4)** onto the bolt.

7. Thread the bolt assembly (steps 3–6 above) into the positive battery terminal.

8. Securely tighten the bolt, then the nut **(2)** installed in step 3 to secure washers **(6)** and cables into place.

" **NOTE:** *Repeat steps 3–8 for the negative vehicle battery cable wire (black or brown), hooking up the negative cable to the negative battery terminal.*

9. Reconnect the *negative* battery terminal cable.

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

Figure 2-4
Side-Mount Vehicle Battery
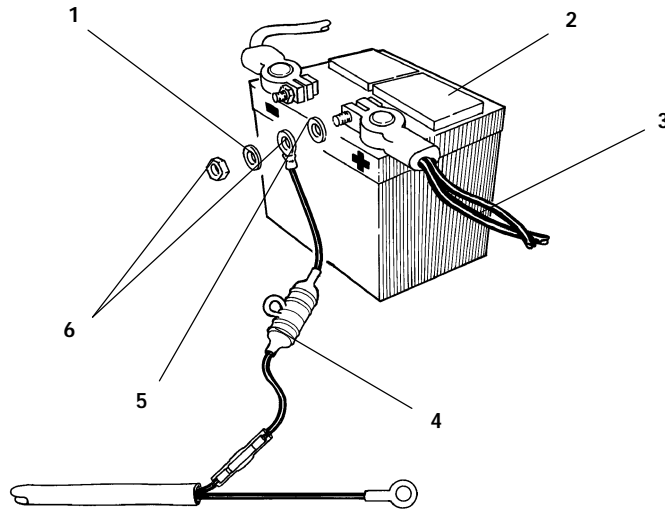
Connecting to Top-Mount Battery Terminals

Do the following to attach the vehicle battery cable to a top-mount battery terminal:

1. Disconnect the *negative* battery terminal cable.

2. Remove the bolts from the battery terminal cable and replace these bolts with 3/8" x 1-1/2" bolts **(5)** and nuts **(1)** furnished in the installation kit.

3. Tighten these nuts securely.

4. Slip a 3/8" washer **(6)** onto the extended end of each bolt.

5. Slide the *positive* (fuse link with red wire **(4)**) terminal ring from the vehicle battery cable onto the positive (**+)** battery bolt **(5)**,

6. Slip a second 3/8" washer **(6)** onto the bolt **(5).**

7. Tightly thread a second 3/8" nut **(1)** onto that bolt **(5).**

" **NOTE:** *Repeat steps 4–7 for the negative battery cable wire (black or brown), connecting the wire to the negative battery computer.*

8. Reconnect the *negative* battery terminal cable.

1. 3/8″ nut
2. Vehicle battery
3. Vehicle battery terminal cable
4. Fuse link
5. 3/8″ x 1-1/2″ bolt
6. 3/8″ washers

Figure 2-5
Top-Mount Battery Terminal

Securing the Vehicle Battery Cable

1. Secure the vehicle battery cable every 18" (50 cm) with adjustable cable clamps. Work from the battery, toward the mounting area for the printer.

2. 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.

#6 Sheet-metal Screw Goes Here

Use large clamp to secure op- tional filter assembly
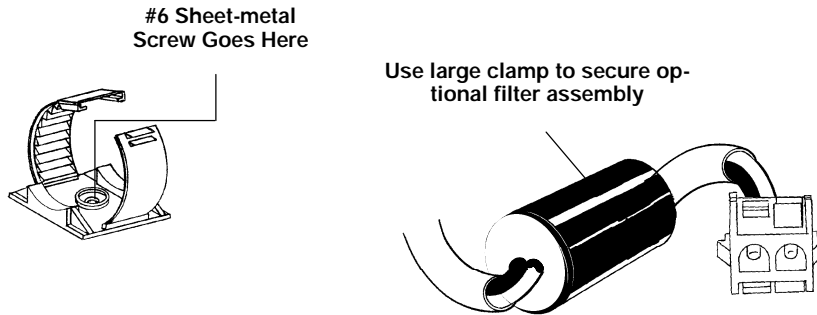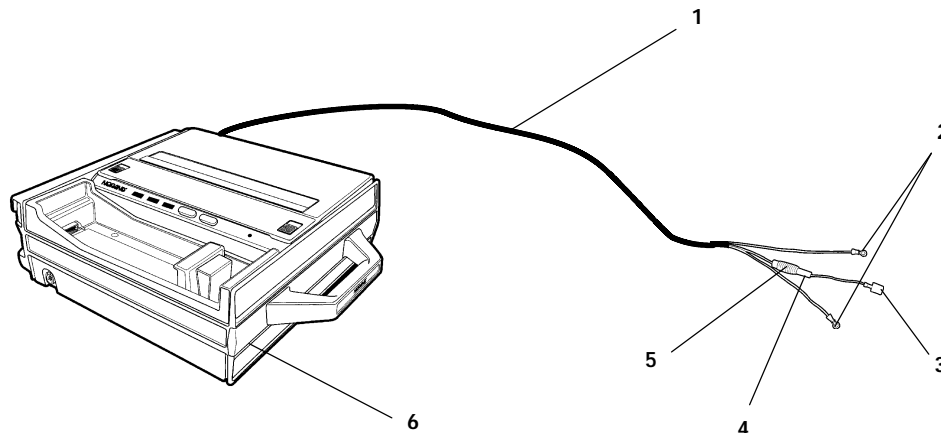

Figure 2-6
Clamps

Grounding 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. Follow these steps to fasten the ground strap:

1. Drill a small hole *(to fit the screw)* where the chassis ground strap for the power cable connector is to be fas- tened. 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.

To the Fuse Block

1. Printer power cable
2. Ground and drain lugs
3. Connects to computer on vehicle fuse block
4. In-line fuse holder
5. 7–10 amp fuse
6. AC portable printer

Figure 2-7
One-Cable Installation Solution

" **NOTE:**   *Due to AC printer UL requirements, this method is recommended
                    only for AC printers.*

Routing the Cables

Use the following guidelines when routing the printer pow-
er cable to the fuse block and the vehicle battery cable:

- " Route the vehicle battery cable *from* the general area
  where the printer will be mounted. Work *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" (50 cm) 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.

### Securing the Printer Power Cable

1. Fasten *both* black wires to the vehicle ground sheet-metal or other metal framework near the fuse block.

2. Slide the lug from the red wire onto an unused terminal on the fuse block.

" **NOTE:** *Do not attempt to defeat or bypass the in-line fuse.*

Checking Printer Power Cable Voltage

Verify the printer power cable voltage and polarity (as indicated), then plug the printer power cable into the printer power connector. If voltage is not present, select a different "hot" terminal on the vehicle fuse block. If voltage is present at that terminal, check the in-line fuse and fuse holder.
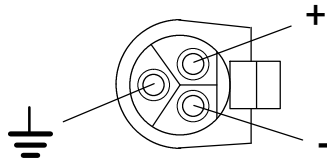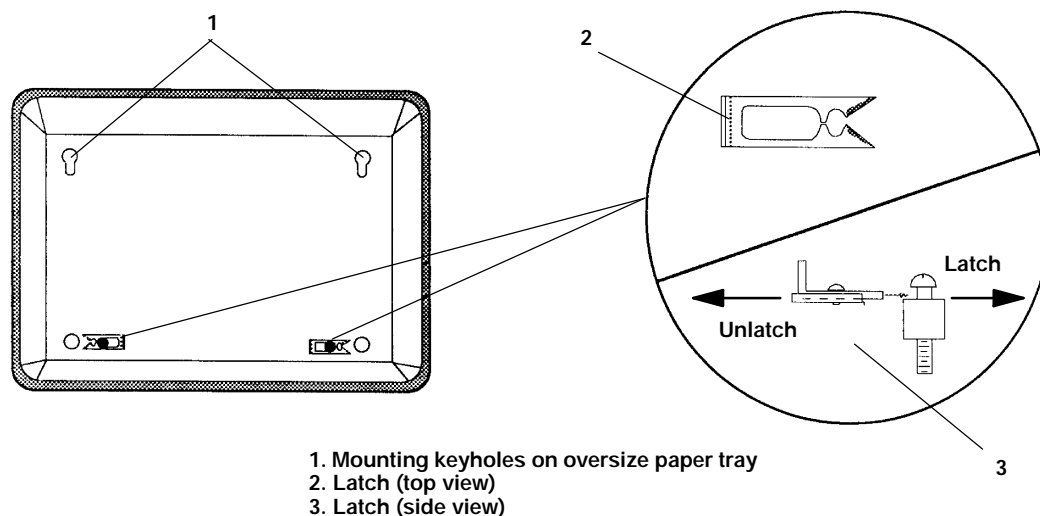

Figure 2-8
Voltage and Polarity

Mechanical Installation

The fixed mount printer and the wall mount printer can be used in a vehicle. Each printer has its own mounting plate.

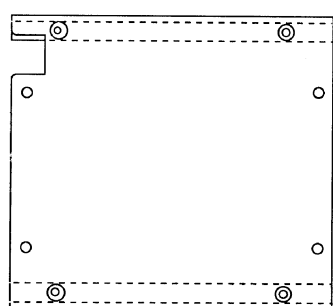## Installing the Fixed Mount Printer Mounting Plates

The fixed and angle mounting plates (shown next page) and printer footprint are for the fixed mount printer. Note the keyholes cut into the bottom of the oversize paper tray. These keyholes allow the fixed mount printer to be installed or removed from a vehicle without using any special tools. Sliding latches in the bottom of the tray hold the printer securely in place.


1. Mounting keyholes on oversize paper tray
2. Latch (top view)
3. Latch (side view)

Figure 2-9
Top View of Fixed Mount Printer Paper Tray

" **NOTE:** *Nuts and bolts are not provided. You must locally select and pur-*
chase hardware that provides the most secure installation possible
for the application and vehicle.

Once you select where to install the fixed mount printer in
the vehicle, you permanently install the appropriate plate.
These mounting plates have access holes where necessary
so that special tools are not required for securely tightening
hardware.

Flat Mounting Plate
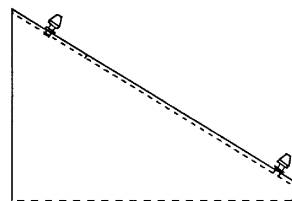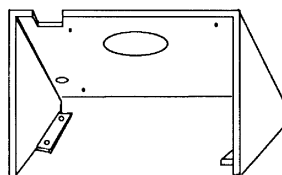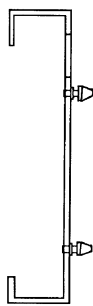
Angle Mounting Plate

Figure 2-10
Flat and Angle Mounting Plates

Installing the Wall Mount Printer

" **NOTE:**   *This mounting plate and these instructions apply only to wall mount printers. Bolts are not provided.*

An area of 17" x 26" x 13" (43 x 66 x 33 cm) is required for the mounting plate, the wall mount printer, and the optional paper tray. Secure the mounting plate in an area of 13" x 18" (33 x 46 cm). Ensure at least 11" (28 cm) clearance beneath the mounting plate to hang the paper tray.
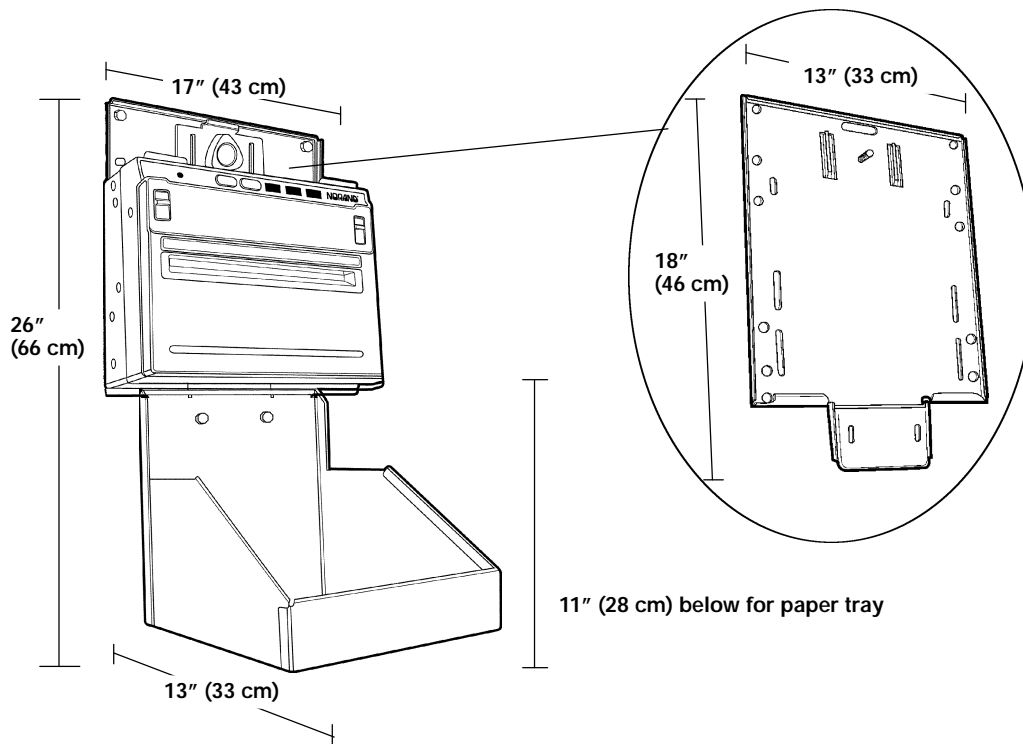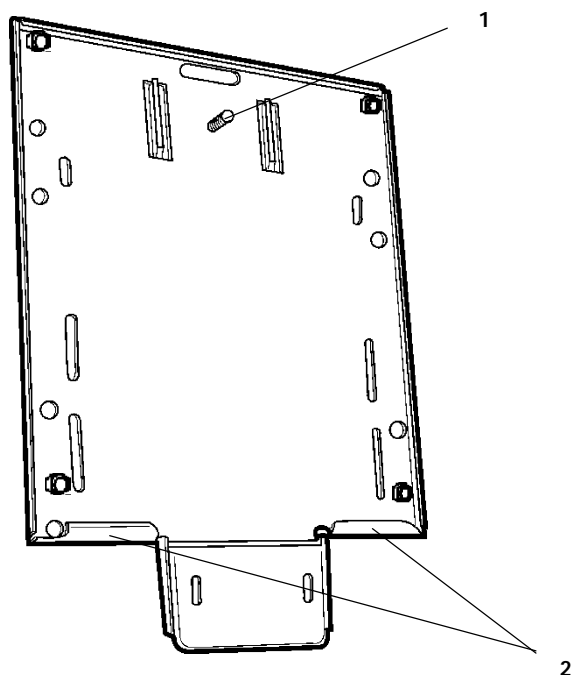
Figure 2-11
Mounting Dimensions for Wall Mount Printer

Installing the Mounting Plate

" **NOTE:**   *Fasteners to mount this plate to the vehicle are not provided.*

The mounting plate for the wall mount printer hangs on the wall of a vehicle. Install the plate with the knob screw on top and the mounting lips facing outward. Use four bolts, evenly distributed, to secure the plate to the wall.


1. Knob screw
2. Mounting lips

Figure 2-12
Mounting Plate

Attaching Paper Tray to Mounting Plate

Use two bolts to attach the paper tray ensemble to the center, bottom lip of the mounting plate.

1. Position the center lip on the paper tray bracket over the center, bottom lip on the mounting plate. The two holes in the paper tray bracket should align with the holes in the center, bottom lip of the mounting plate.

2. Hold the paper tray ensemble in place and insert two 1/4" bolts in the holes, through the paper tray bracket. Use a 7/16" wrench to tighten the bolts.
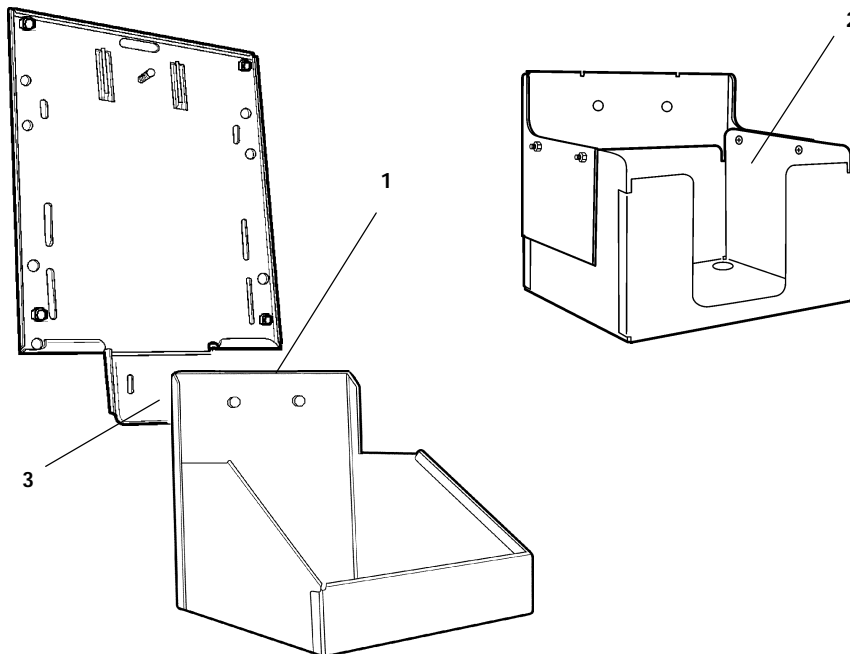

1. Center lip on paper tray
2. Compact paper tray
3. Center, bottom lip on mounting plate

Figure 2-13
Attach Paper Tray to Mounting Plate

Mounting the Printer

The wall mount printer sits on the bottom lip of the mounting plate. The top of the printer is held to the mounting plate via a printer tie-down bracket (5" x 4") and knob.

1. Using the two horizontal slots on the printer bottom, push the printer onto the two bottom lips on the mounting plate. Hold the printer against the mounting plate.

2. Set the tie-down bracket into the horizontal slot at the top of the printer, then align and turn the black knob clockwise onto the knob screw to tighten the bracket onto the mounting plate.
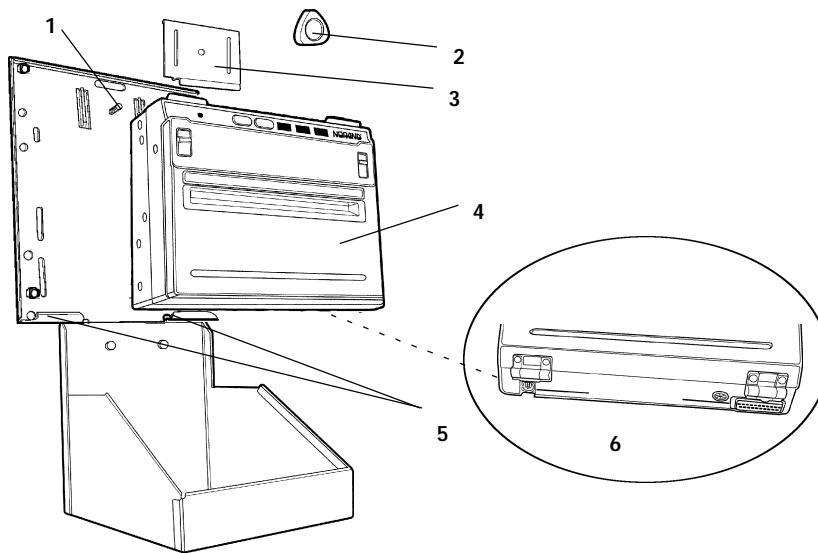
1. Knob screw on mounting plate assembly
2. Knob
3. Printer tie-down bracket
4. Printer
5. Bottom lips on mounting plate assembly
**6. Bottom of printer**

Figure 2-14
Mounting the Wall Mount Printer

Final Connections

Follow these instructions to connect all components of your configuration:

With the 61XX, 63XX, and 66XX Computers, install a "Y" cable to supply power to both the vehicle dock or the remote terminal holder and to the printer (Installation Kit Number 203-344-002). The rectangular connector plugs into the vehicle battery cable.
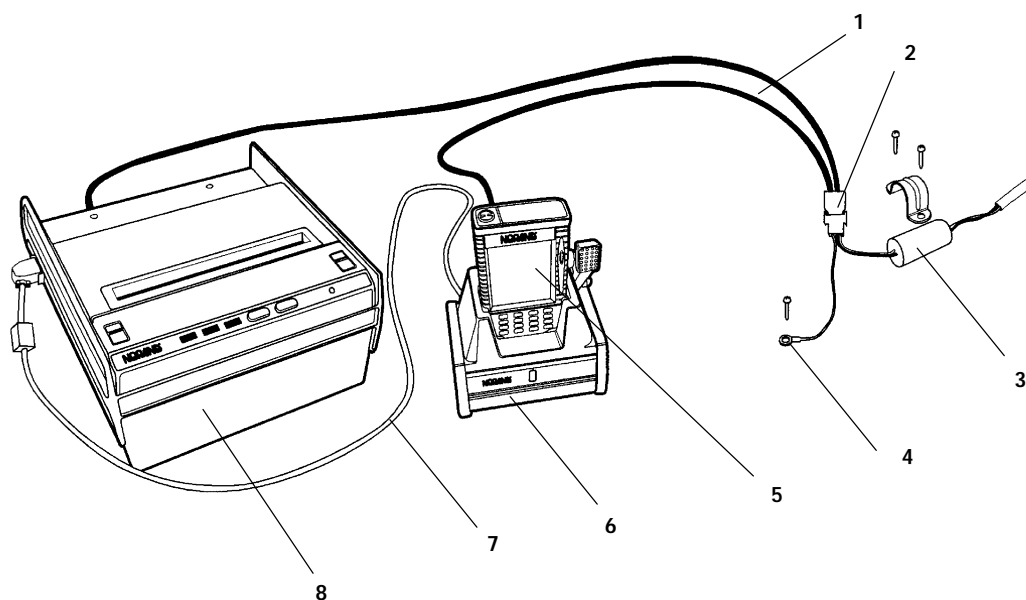
1. **"Y" power cable**
2. **Rectangular connector**
3. **Vehicle battery cable with filter** *(goes to battery connector)*
4. **Chassis ground**
5. **6100 Computer**
6. **6100 Vehicle Dock**
7. **Remote terminal data cable**
8. **Fixed mount printer**

Figure 2-15
Cable Connections

Operation

" "

Check List

This section instructs how to set up the 4820 Printer for the first time. Make sure you complete these tasks:

" Printer is unpacked.

" Foam blocks are removed from around the printer. Save the box and packaging materials for future use, such as servicing, relocations, etc.

" Twist tie is removed from the print head.

" Power cable is hooked up to the vehicle battery or power source.

" Printer is mounted in the vehicle.

The following tasks must be done. *Specific instructions for these tasks are described on the pages given*:

1. Connect the battery (page 3-2).

2. Install the ribbon cartridge (page 3-7).

3. Load the paper into the paper tray (page 3-9) and into the printer (several steps starting on page 3-11).

4. Insert the hand-held computer (page 3-15).

" **NOTE:**   *Complete these tasks **before** starting any printer operations.*
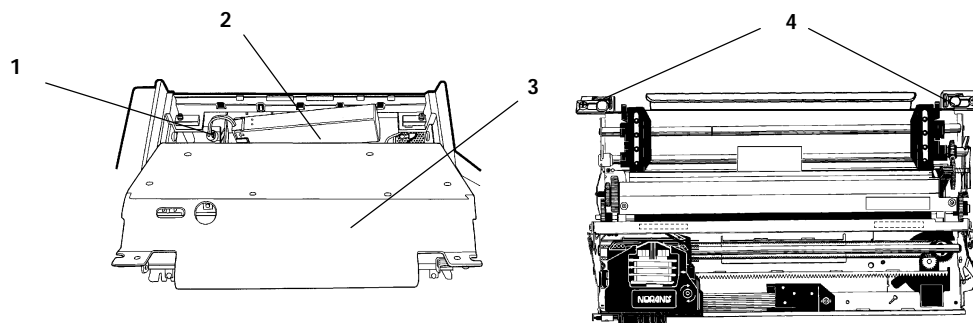
Installing Internal Battery

The optional internal battery *(sold separately)* is primarily for the portable printer; *it is not for wall mount printers.* The battery can go in some fixed mount printers using a cable (P/N: 216-756-001) and adapter (P/N: 203-377-001). The internal printer battery recharges when the printer is connected to an external power source via the power cable. This battery *does not* charge the computer.

" **NOTE:**   *Remove the printer battery when storing a printer for over 30 days. After storage, reinstall the battery and connect the printer to an external power source for at least two hours, to recharge the battery.*

1. Unlatch *(pull inward)* and lift open the printer mechanism, then lower the battery into the rear of the printer case.

2. Attach the battery cable to the battery as you push the battery down and back into the case, as shown.

3. Close and latch *(push outward)* the printer mechanism into place.

1. Battery cable
2. Battery *(top edge)*
3. Printer mechanism *(raised)*
4. Latches

Figure 3-1
Installing Internal Battery

Installing a Battery Spacer

In the newer printers, smaller battery packs are used. These smaller battery packs are lighter in weight than the original and have greater capacity (operating time) than the original larger batteries. A small metal spacer is installed over one of the plastic battery retainers built into the print-er to securely fit the smaller battery pack into the printer.

In a Deep Paper Tray

If you have the deep paper tray (200-sheet), slide the ap-propriate metal spacer down over one of the plastic battery retainer clips in the printer as shown. Put the spacer on the right-hand side of the retainer clip *away from the con-nector end of the battery.* On most printers with the deep paper tray, this is the corner retainer clip, as shown. Other printers require that you place the metal spacer on the oth-er retainer clip, located part-way across the printer cavity. The metal spacer can be removed and relocated if your first choice interferes with the battery cable and connector.
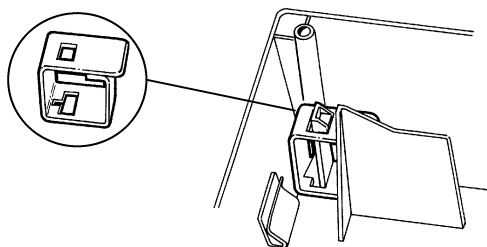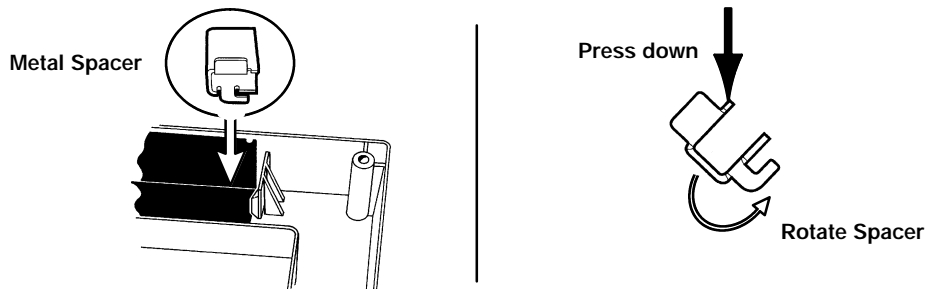

Figure 3-2
Spacer Installed in Deep Paper Tray

In a Shallow Paper Tray

The shallow paper tray (50-sheet) requires a different metal spacer that hooks under one of the existing battery retainer clips, as shown. Hook the metal spacer under the battery retaining clip farthest from the battery cable and connector. This prevents the spacer from interfering with or damaging the battery connector.

1. Lower the metal spacer into the printer and press straight down on the spacer while rotating it under the existing clip.

Figure 3-3
Lowering Spacer in Shallow Paper Tray

2. Rotate the metal spacer until it hooks in place.
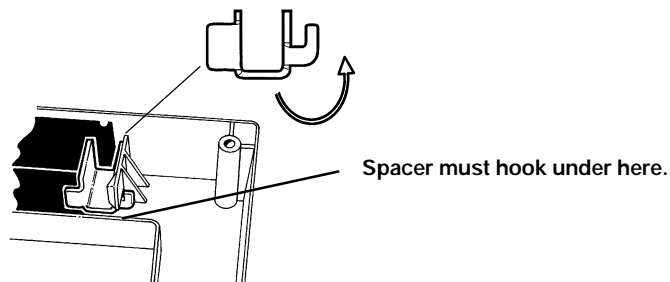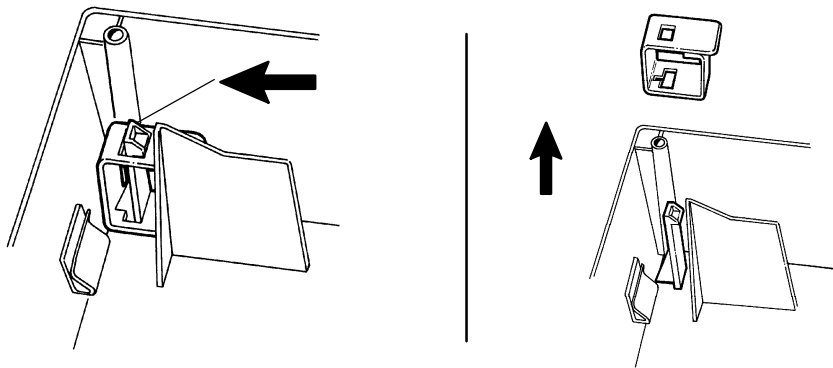

Figure 3-4
Spacer in Shallow Tray

Removing a Battery Spacer

There may be instances where you want to use a larger battery in a printer that has been using the smaller batteries. If so, you can remove the battery adapter spacers by following the instructions below for your particular printer.

From a Deep Paper Tray

To remove the spacer from a printer with a deep paper tray, do the following:

1. Press on the plastic piece to release the clip (press the piece in the direction of the arrow shown below).
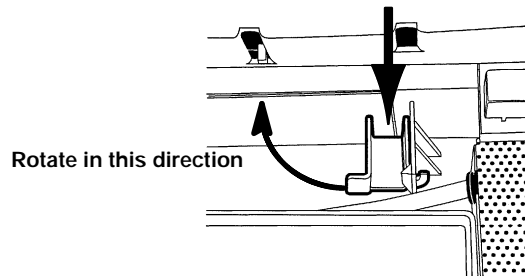
2. Lift the spacer up and out of the printer.

Figure 3-5
Releasing Spacer
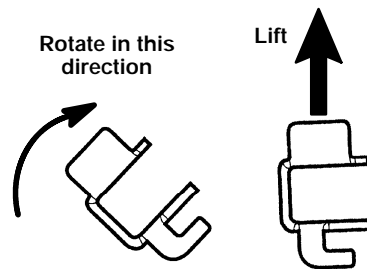
From a Shallow Paper Tray

To remove the battery spacer from a printer with a shallow paper tray, do the following:

1. Grasp the spacer firmly with pliers and press down firmly on the spacer as you rotate it. (Rotate the spacer *clockwise* as shown.)

Figure 3-6
Pressing Down with Pliers

2. Rotate the spacer until it is free from the battery retainer.
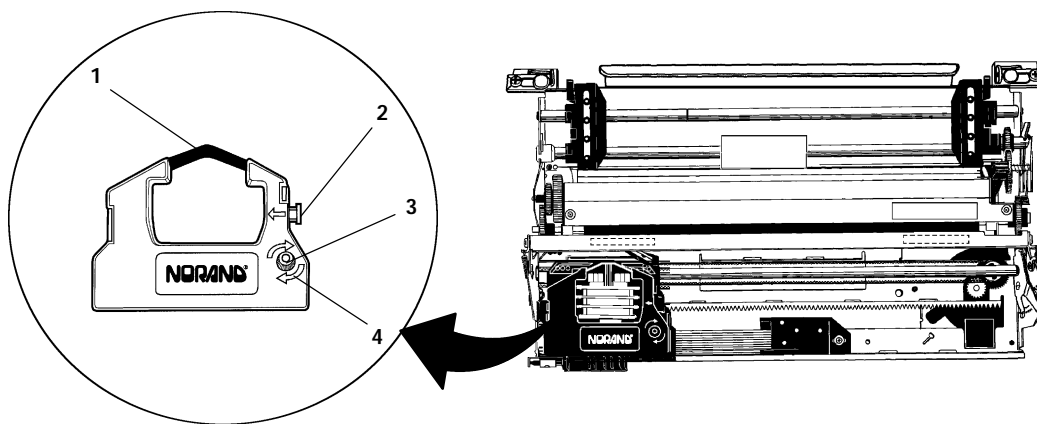

Figure 3-7
Rotating Spacer

3. Lift the spacer out from the printer cavity.

Installing the Ribbon Cartridge

Ensure there is a ribbon cartridge in the printer before you print and that the ribbon is fully seated (cartridge makes a distinct "snap" or "click") with the visible portion of the ribbon not frayed or torn.

1. Turn the ribbon advance knob (in the direction of the raised arrows) to remove any slack in the ribbon.

2. With the ribbon cartridge locking tab squeezed against the cartridge, lower the cartridge over the print head.

3. Lower the tab side of the cartridge until it clicks.

4. Release the tab and press *down* on the arrow to fully seat the ribbon cartridge (tab clicks *outward).*

5. Turn the ribbon advance knob *(follow raised arrows)* to align the ribbon in the front of the print head.

1. Ribbon
2. Locking tab
3. Advance knob
4. Tightens ribbon

Figure 3-8
Ribbon Cartridge

Adjusting the Print Head Gap

For fixed mount and portable printers, the head gap adjust-
er is on the *right side* of the printer mechanism. For wall
mount printers, the head gap adjuster is on the *left*. The
head gap adjustor has five notches between the print head
and the platen. This adjuster is for different paper thick-
nesses.

Verify the thickness of the paper loaded into the printer.

- " If you are using single-sheet forms, set the head gap
  adjuster to the third notch *away from the printer.*

- " If you are using multiple-sheet forms (2-ply or 3-ply),
  set the head gap adjuster to the fourth notch *away
  from the paper.*

- " If you experience frequent head jams, set the head gap
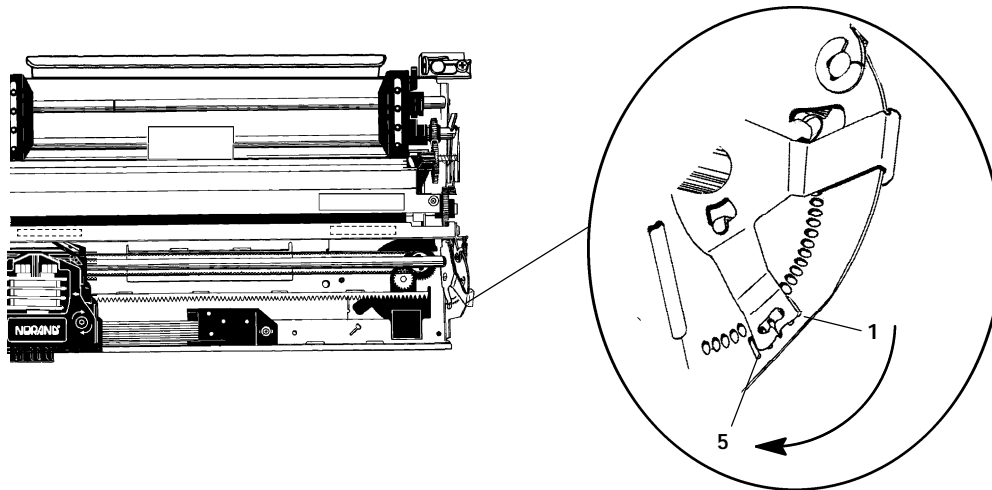 adjuster to the fifth notch *away from the paper.* This
  may stop the head jams.

Figure 3-9
**Print Head Adjuster Set on Third Notch**

Loading Paper Tray

" **NOTE:**   *Do not exceed the recommended amounts of paper quantity or thick-
ness. When you load multiple-sheet paper into the paper tray, be
sure to have the original, or the face, placed correctly.*

Fixed Mount and Portable Printers

1. Unlatch *(pull inward)* and raise the printer mecha-
    nism.

2. Lower a stack of paper into the paper tray under the
    printer mechanism, as shown.

3. Pull the top form out and over the printer mechanism.

4. Lower the printer mechanism and latch *(push out-
    ward)* into place.
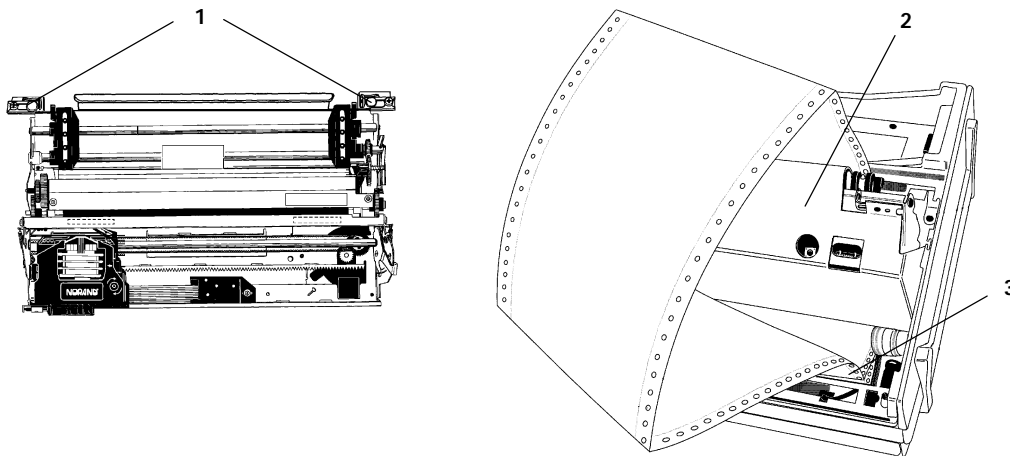
1. Latches
2. Printer mechanism *(back view)*
3. Paper tray *(beneath printer mechanism)*

Figure 3-10
Pulling Paper Over Printer Mechanism

Wall Mount Printer

If you have a compact paper tray attached to the wall
mount printer, do the following to load paper into that tray:

1. Hold a stack of paper, *up to 2.5 inches (6 cm) thick,*
    with one hand at the top of the paper and the other
    hand at the bottom.

2. Hold the paper facing you and lower the stack verti-
    cally into the paper tray.

" **NOTE:**   *As you lower the paper, simultaneously pull the bottom of the paper
upward until the entire stack fits inside the paper tray. The top and
bottom of the paper should sit evenly in the tray.*

3. Pull the top form out to load into the printer.
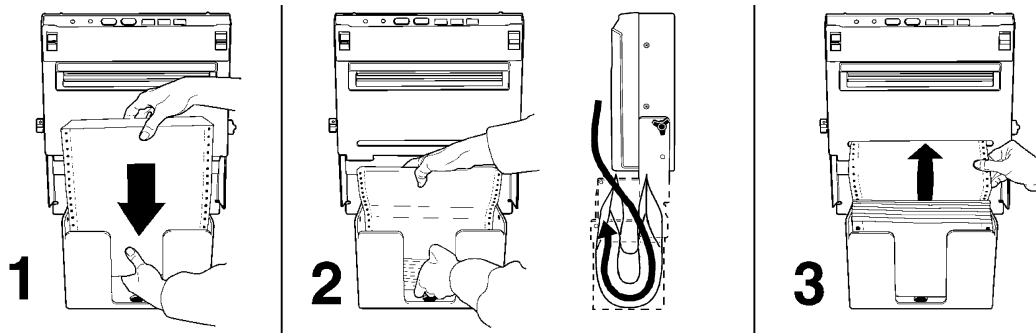
Figure 3-11
Loading Compact Paper Tray

Loading Paper Into Printer

B **CAUTION:**   **Do the following to load the paper into the printer, or paper jams may occur.**

Loading the paper into the printer takes several steps: checking the pinfeed drive gear, positioning the paper, adjusting the pinfeed holders, and setting the paper.

Checking Pinfeed Drive Gear

The lever for the pinfeed drive gear is near the platen *opposite the green thumb wheel.* The pinfeed drive gear must be "engaged" ***at all times*** to push paper into the printer.
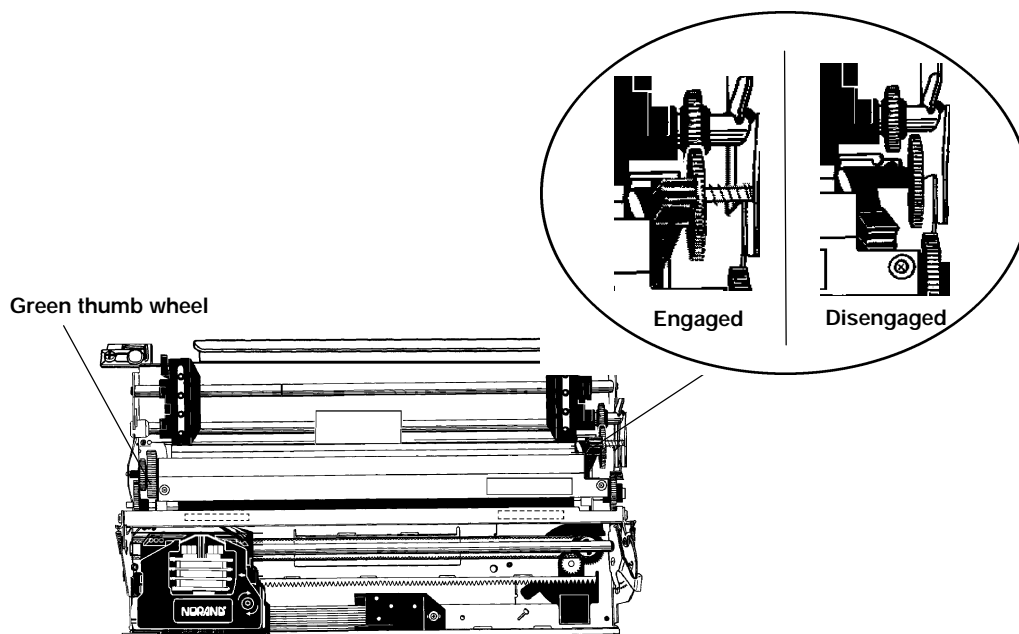

Figure 3-12
"Engaged" Versus "Disengaged" Platen Lever

Positioning the Paper

Do the following to position the paper into the printer:

1. Open each pinfeed holder outward.
2. Lift the paper bail.
3. Align and engage the first few holes in the paper with the pinfeed holder pins; then close the pinfeed holders. Use the green thumb wheel to position the paper under the paper guide, as shown in Figure 3-13.
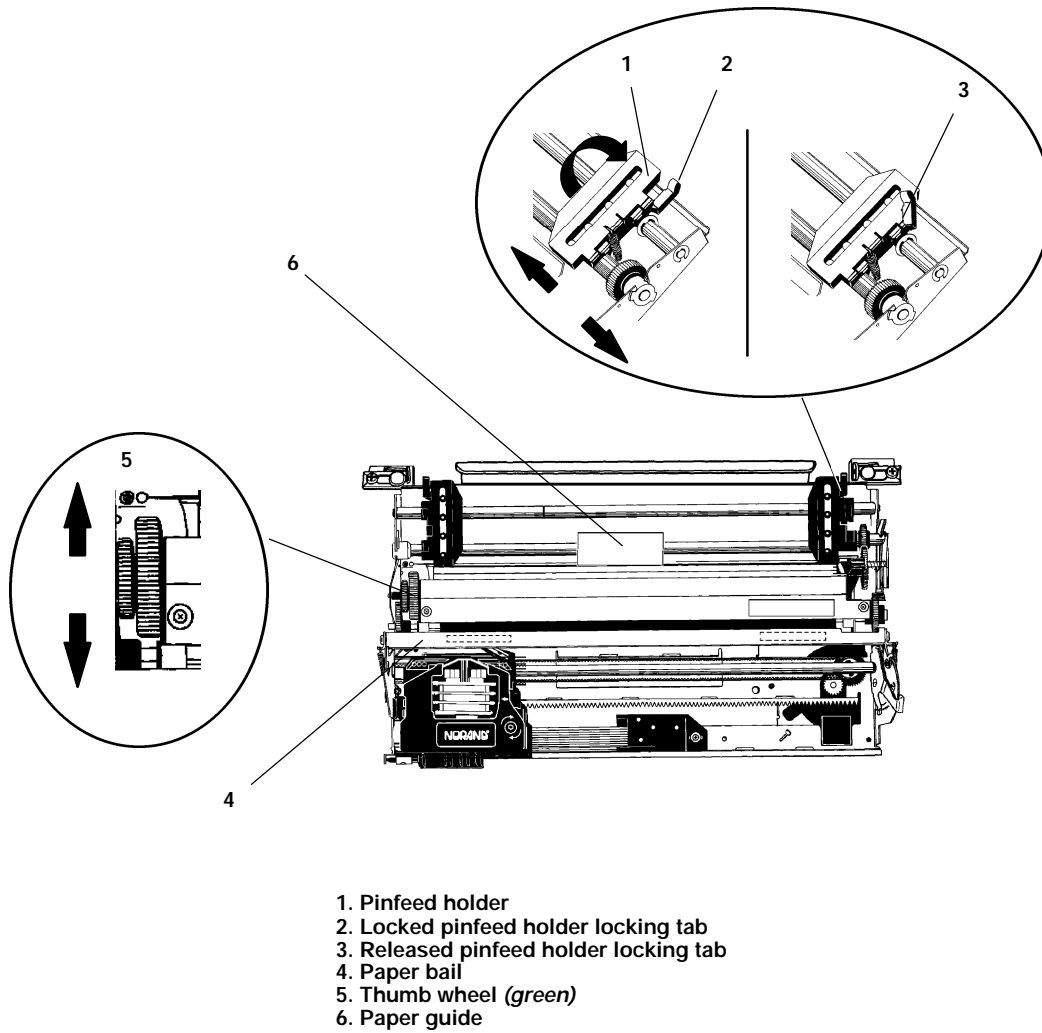
Adjusting the Pinfeed Holders

" **NOTE:**   *There are two pinfeed holders, one next to the green thumb wheel and one on the opposite side of the printer mechanism. Always loosen the pinfeed holder that is opposite from the green thumb wheel.*

Adjusting the pinfeed holder next to the green thumb wheel may cause information to print in the wrong areas. If this pinfeed holder is moved, correct its location by loosening its locking tab and moving it as close to the green thumb wheel as possible, then pushing its locking tab down to lock it in place, before doing the correct pinfeed holder.

Do these steps to make sure the paper fits within the pinfeed holders:

1. Place the paper in the pinfeed holder opposite the green thumb wheel and close it.
2. Release the locking tab on the pinfeed holder next to the green thumb wheel and adjust the holder to align the paper.
3. Place the paper in the same pinfeed holder, then close the holder.
4. Make sure the paper is smooth between the pinfeed holders, then push the locking tab down on the holder next to the green thumb wheel to lock that holder in place.

1. Pinfeed holder
2. Locked pinfeed holder locking tab
3. Released pinfeed holder locking tab
4. Paper bail
5. Thumb wheel *(green)*
6. Paper guide

Figure 3-13
Components That Align Paper into Printer

Setting the Paper

Do the following to align and feed the paper into the printer.

1. Press the **ADVANCE** button on the control panel, or use the green thumb wheel, until the paper is aligned and fed into the printer.
2. Lower the paper bail.
3. Close the printer cover. Ensure that the paper is threaded through the paper slot.

Press the **SET TOP** button to adjust where the printer is at for the top of the page, if necessary. The printer is ready to start printing.

Inserting Computer in Terminal Holder

" **NOTE:**   *When removing the computer, do not press the computer keys*
                  against the terminal slide retainer. Always store the computer in the
                  terminal holder.

The fixed mount or portable printers have terminal holder
options for the 4000 Series, 61XX, or 62XX Computers.

Inserting 4000 Series or 62XX Computer

1. Insert the *bottom* of the computer into the terminal
    slide retainer.

2. Use the computer to push the terminal slide retainer
    in the direction (shown in figure a).

3. Lower the connector end of the computer into the ter-
    minal holder.

4. Slide the computer to fully seat it in the printer dock-
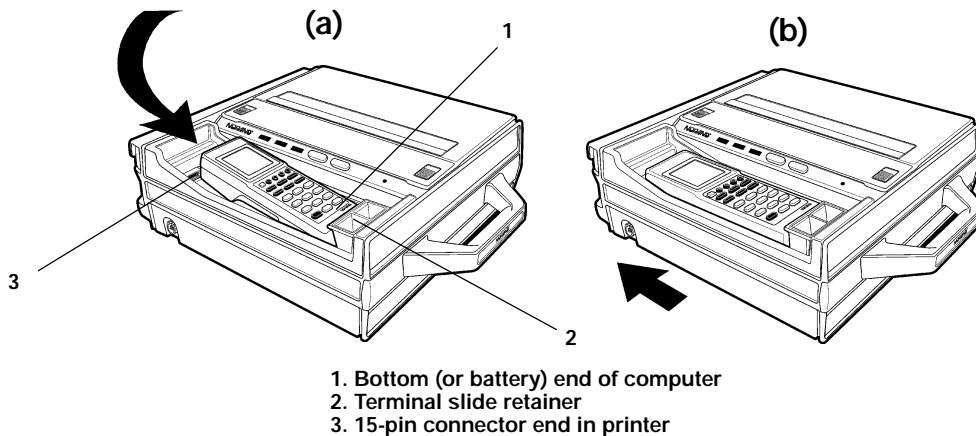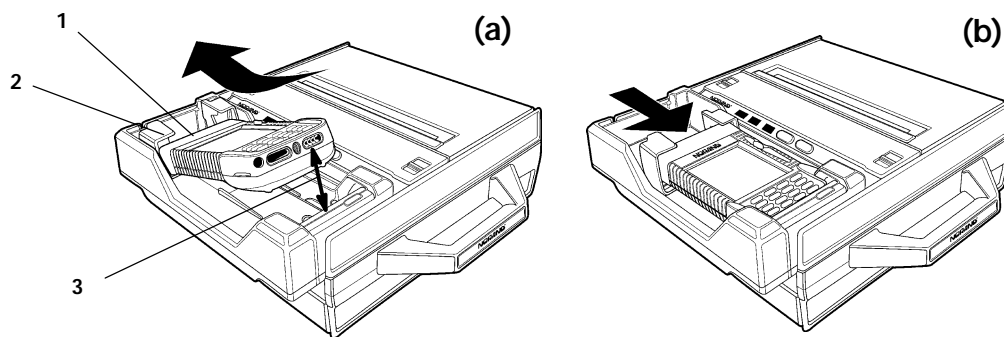   ing connector (figure b).

1. Bottom (or battery) end of computer
2. Terminal slide retainer
3. 15-pin connector end in printer

Figure 3-14
Inserting 4000 Series or 62XX Computer into Terminal Holder

Inserting 61XX Computer

Do the following to insert the computer into the terminal holder:

1. Insert the *top* of the computer into the terminal slide retainer.
2. Use the computer to push the terminal slide retainer in the direction (shown in figure a).
3. Lower the connector end of the computer into the terminal holder.
4. Slide the computer to fully seat it in the docking connector (figure b).

1. Top (or display) end of computer
2. Terminal slide retainer
3. Docking connectors

Figure 3-15
Inserting 6100 Computer into Terminal Holder

<p align="right">Section 4</p>

Maintenance

The printer lasts longer and performs better when it is operated correctly and kept clean.

Operating Guidelines

Do

" Ensure that the computer remains connected to the printer throughout a printing sequence or operation.

" Make sure the printer cover is closed at all times.

" Ensure there is paper, properly installed in the paper tray.

" Clean the external surface of the printer using a soft cloth moistened with a good quality cleaner, such as MICRO-CLEAN II.

" Disconnect the printer power cable when jump-starting the vehicle.

Do Not

" Spill liquids or food crumbs into the printer.

" Use solvents or abrasive cleaners on the printer.

" Rest objects on, under, against, or sit or stand on the printer.

" Allow the printer to be knocked over or physically damaged.

" Start or stop vehicle engine while printing.

" Overload paper tray (paper jams will occur).

" Use objects to remove paper from between the print head and the platen (damage to mask spring and print head will occur).

General Cleaning

ᴮ **CAUTION:**   **Do not use glass cleaners with ammonia. Permanent damage to the printer cover will occur if such glass cleaners are used.**

                      Do not use abrasives or solvents (or any product containing these substances) to clean any part of the unit. Permanent damage to the printer will occur if such substances are used.

                      Never use ketonic solvents (acetone or ketone) or aromatic solvents (toluene or xylene) to clean any part of the printer. Doing this can damage the printer.

" **NOTE:**   *MICRO-CLEAN II is the only cleaner recommended for this purpose. Other cleaners can damage the case.*

                      GUIDE SHAFT CLEANER is recommended for cleaning your 80-column printer guide shafts. Cleaning the printer guide shaft reduces the number of head jams caused by dirt and buildup.

                      Both cleaners can be purchased through Inside Sales at 1-800-255-6292.

Periodic cleaning helps maintain the appearance and reliability of the printer. When cleaning the printer, inspect both the outside and the inside for obvious signs of damage, wear, or impending failure.

Cleaning the Outside

Do not pour liquid cleaners directly on the printer case. Instead, dampen a soft, lint-free cloth with a quality cleaner and clean the exterior surfaces with this cloth. *Do not use solvent solutions.* Inspect the dc power jack, all cables, and the remote terminal holder or vehicle dock for damage.

Cleaning the Inside

B **CAUTION:**   **Let the printer cool before you clean the inside of the printer, or you may burn your fingers.**

Open the printer cover and inspect the ribbon cartridge and all visible moving parts on the printer mechanism for signs of wear or damage.

1. Head gap adjuster
2. Ribbon cartridge
3. Paper bail
4. Pinfeed holder
5. Paper guide
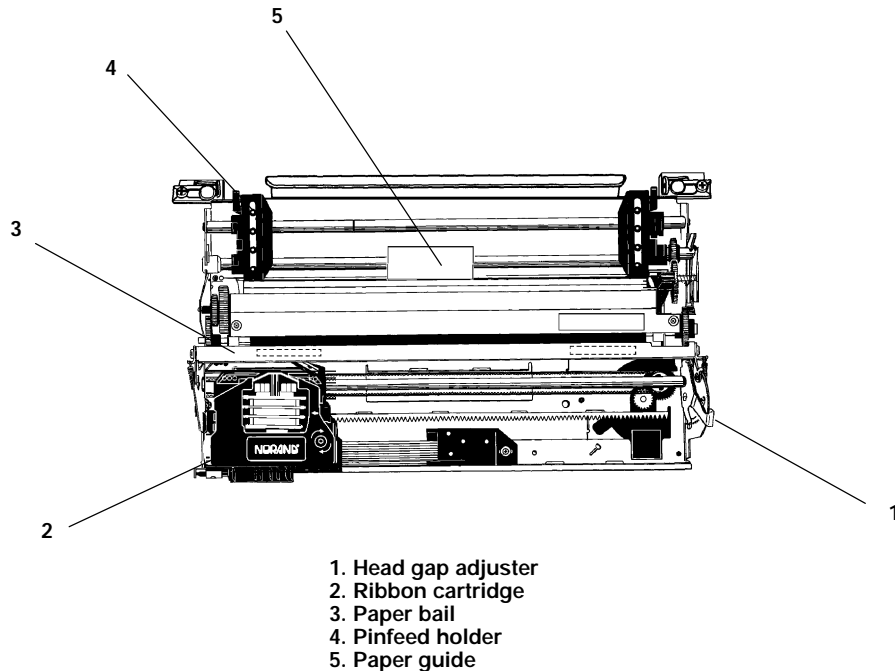
Figure 4-1
Check Points on Printer Mechanism

Use a low-pressure, dry air source, such as "canned air" available at electronic supply houses and typewriter repair facilities, or a vacuum, to remove accumulated paper dust from the printer mechanism.

The printer ribbon contains a special lubricant to ensure that the fine dot wires inside the print head receive adequate lubrication. Replace the ribbon frequently to prolong the life of the print head. The printer requires no additional user-applied lubrication.

Removing Old Ribbon Cartridge

Center the print head, then do the following to remove the old ribbon cartridge:

1. Squeeze the ribbon cartridge locking tab (on the side of the cartridge) against the ribbon cartridge.

2. Lift the ribbon cartridge to remove the ribbon from the print head. Ensure the ribbon does not catch.

3. Lift the ribbon cartridge out of the printer.
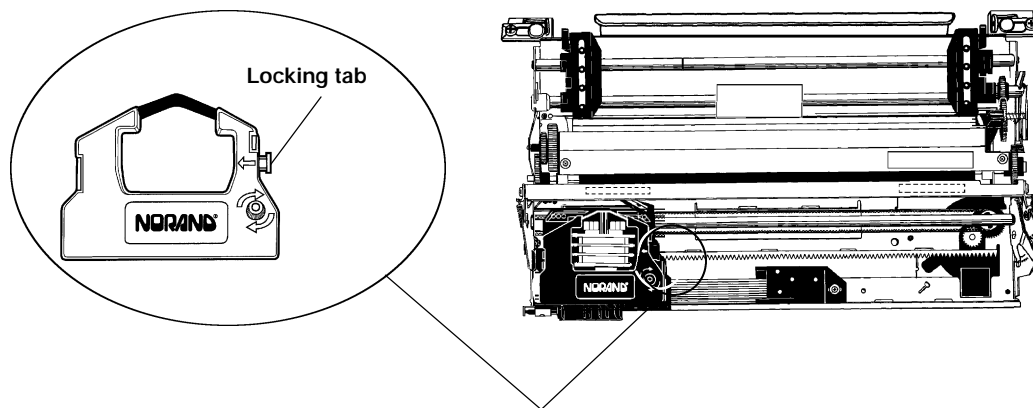
Figure 4-2
Remove Old Ribbon Cartridge

Cleaning the Mask Spring

Look at the mask spring behind the print head. If the mask spring needs to be cleaned, go on to the next page. If the mask spring appears to be in good condition, go to page 4-7 and install a new ribbon cartridge.
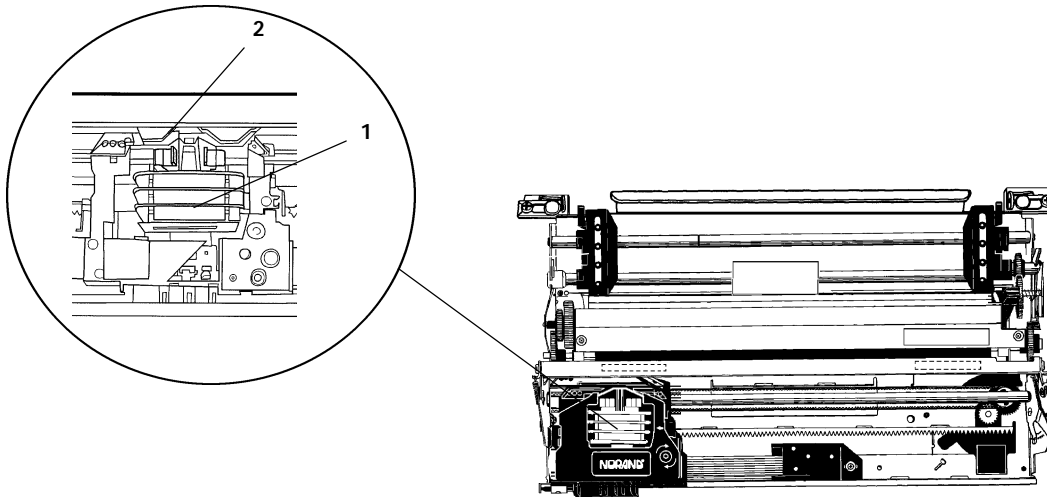
1.Print head
2. Mask spring

Figure 4-3
Mask Spring Location

" **NOTE:**   *The clear plastic holder that seats the mask spring can be removed if*
necessary. Use your fingernails to loosen the base of the holder,
then pull the holder straight up from the printer mechanism.

Do the following to clean the mask spring:

1. Unlatch the print head locking tabs to release the
    print head.

2. Lift the print head aside, then lift up the paper bail.
    Do not disconnect the cable from the print head unit.

B **CAUTION:**   **Never use a sharp object, such as pinchers, to clean between
the print head and the platen (rubber roller). This can damage
the mask spring and print head.**

3. Remove the metal mask spring from the paper guide.

4. Clean the mask spring with a quality cleaner and re-
    place the mask spring if it is damaged.

5. Put the good, clean mask spring into the paper guide.

6. Close the paper bail and reinsert the print head.

7. Latch the two print head locking tabs.
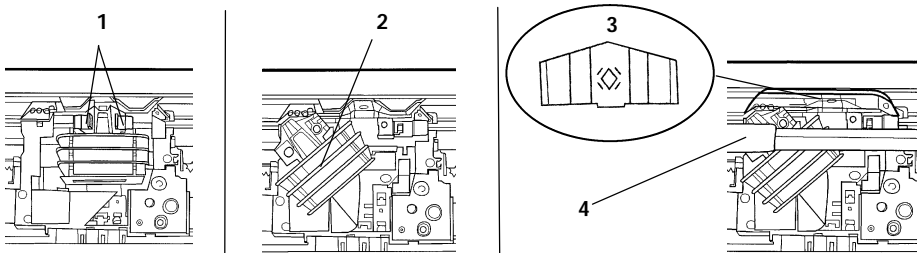
1. Print head locking tabs
2. Print head lifted aside
3. Mask spring
4. Paper bail *(raised)*

Figure 4-4
Exposing the Mask Spring

Installing New Ribbon Cartridge

" **NOTE:**   *Make sure that the visible portion of the ribbon is not frayed or torn before you install the new ribbon cartridge.*

Do the following to install the new ribbon cartridge:

1. Turn the ribbon advance knob (in the direction of the raised arrows) to remove any slack in the ribbon.

2. With the ribbon cartridge locking tab squeezed against the cartridge, lower the cartridge over the print head.

3. Lower the tab side of the cartridge until it clicks into position.

4. Release the tab and press *down* on the arrow to fully seat the ribbon cartridge (tab clicks *outward*).

5. Turn the ribbon advance knob *(follow raised arrows)* to align the ribbon in the front of the print head.

1. Ribbon
2. Locking tab
3. Advance knob
4. Tightens ribbon
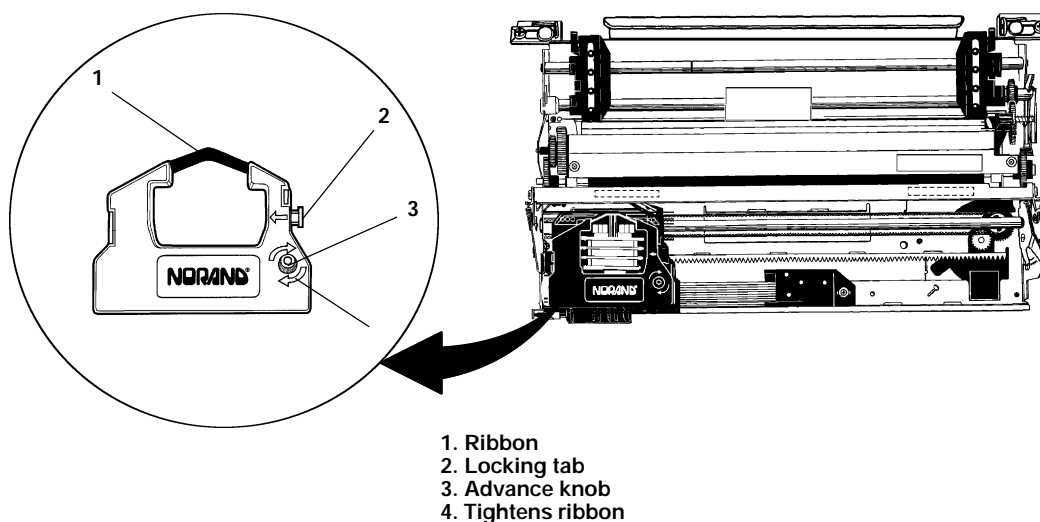
Figure 4-5
Installing Ribbon Cartridge

Section 5

Troubleshooting

" "

This section will help you correct printing problems that may occur. If you experience a printing problem, you can perform several tests to help identify and possible cure the problem.

Checking the Power Source

Press any key on the printer control panel. If there is power, the power indicator (green LED) turns on and the print head moves to its starting position.

If there is no reaction from the printer after you press a key on the control panel, verify that the power cables are properly connected between the printer and its power source (internal battery, vehicle battery, or ac).

" **Internal battery:** Check the power cable by attaching this cable to another known-good printer. Replace this cable if necessary.

" **Vehicle battery:** Attach the printer in question to another vehicle battery.

" **AC power:** Plug the printer into another outlet.

If none of these steps "wake" up the printer with the problem, then that printer needs to be returned for service.

Self-Test

" **NOTE:**   *This method is recommended to determine printer functionality.*

A self-test is equivalent to a warm-start — performed by pressing both the **ADVANCE** and **SET TOP** buttons, on the control panel, at the same time, for about five seconds until the printer beeps and all indicators are lit. As the self-test progresses (for about 15 seconds), the indicator lights change. When the self-test is done, the printer should generate a report similar to the following:

```
Copyright 1989, Norand Corporation
ROM check              41    GO   ⎫
RAM1 check             GO         ⎬   "GO" means the tests passed.
RAM2 check             GO         ⎭
Input Voltage Vhd/mtr  13.0V ------------   Power to Printer Mechanism measurement

NP4820 - Version       1.04  ------------   Firmware program name and Version

Zero                   0 -----------------  Setting for Switch #2
Auto LF         OFF
Interface type  NPCP Control      ⎫   Factory default settings for protocol
Parity                 None        ⎬
Baud rate              19200      ⎭
```

 -------------------------   Test Pattern

Figure 5-1
Sample Printout

This report lists any errors detected during the self-test, and the printer's communication configuration. This report tests the internal power supply, the printer mechanism, and the print head dot wires.

" **If a partial report generates and a printer error occurs during printing,**
refer to Table 5-2 on page 5-5.

- **If the report does generate,**
  the printer may not be responding to the host comput-
  er print requests due to communications or computer-
  related problems.

- **If the printer does not generate a report:**

  - Place the hand-held computer in a known-good
    printer and do a self-test on that printer. If no
    report, troubleshoot the computer.

  - Place another known-good computer in this
    printer and do a self-test on this printer. If no
    report, troubleshoot this printer.

  - Verify the communications settings (in the print-
    out). Have these reset, if necessary.

The printout gives pertinent information about the printer's
internal settings. Keep this printout handy when you con-
tact the Customer Response Center for assistance.

The resulting printout indicates the highest voltage (such
as the internal battery, the ac power cord, or the dc power
jack) to the printer mechanism *(valid range 11.5 – 15.0);* the
printer's capability; "DIP" switch settings; and the firmware
version installed in the printer.

Dual Input Package (DIP) switch settings are configured at
the factory. Should these switches be changed, the printer
may not print. *Contact the Customer Response Center for
assistance.*

NORAND**R** computers use the NORAND Portable Commu-
nications Protocol (NPCP). The printer has four common
configurations (Table 5-1), and more customized configura-
tions. *DIP switch #2 can be turned On to print zeroes with slashes.*

Table 5-1
Common DIP Switch Configurations

Configuration	DIP Switches:	1	2	3	4	5	6	7	8
NPCP 9600 bps		Off	Off	Off	Off	Off	Off	On	Off
NPCP 19200 bps *(factory default)*		Off	Off	Off	Off	Off	Off	Off	Off
DTR, 9600 bps, No parity, 8 data bits		Off	Off	Off	Off	On	On	On	Off
XON/XOFF 9600 bps, No parity *(not recommended)*		Off	Off	Off	On	On	On	On	Off
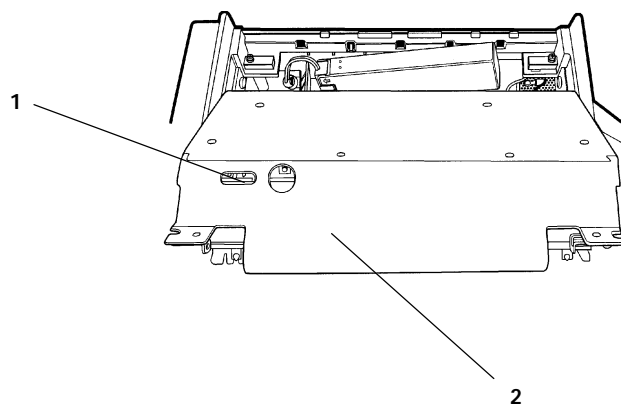
1. DIP switches
2. Printer mechanism *(raised)*

Figure 5-2
DIP Switches

Resetting the Printer

First try the self-test, described on page 5-2. If the self-test fails, and all other tests and diagnostics available do not work, then remove power for about five minutes (unplug external power source, detach internal battery, detach from vehicle battery), then reapply power. This is equivalent to a cold-start. Most problems usually correct themselves. If this is not the case, contact the Customer Response Center at 1-800-221-9236 for assistance.

Possible Printer Problems

Table 5-2 lists actual printing problems, possible causes, and actions you should take to correct a problem.

Table 5-2
Possible Printer Problems

Symptom	Cause	Solution
Printer beeps (detectable errors)	Printer out of paper	Reload paper into printer mechanism.
	Head Jam	Clear obstruction.
	Voltage too high or low *(Note: Error lights do not flash if voltage is too high)*	Adjust supply voltage to 11.5 – 15 volts.
Printer does not print	No voltage	Adjust supply voltage to 11.5 – 15 volts.
	Voltage too high or low	
	Flat cable connecting control panel board to pivot frame assembly is loose.	Tighten cable connections.
	No data input	Tighten computer connections.
	DIP switches were changed.	Correct DIP switch configurations.

Table 5-2 (Continued)
Possible Printer Problems

Symptom	Cause	Solution
No paper feed (paper jam)	Rollers on paper bail out of position.	Rollers on paper bail should be one-third in from each end.
	Print head is resistant.	Slide print head back and forth to loosen resistance.
	Print head gap is too tight.	Set print head adjuster to fifth notch.
	Drive gear not engaged	Press the drive gear lever to "engaged" position.
	Paper tray too full.	Remove some paper from the paper tray.
	Paper perforations torn	Remove torn paper, load and center new paper, readjust pinfeed holders.
	Paper is wrinkled, creased, missing perforations, or moist.	Replace the paper.
	Paper scraps found in printer mechanism or around platen.	Remove any paper scraps and do a cleaning.
	Printer mechanism is unlatched (unlocked).	Latch (lock) the printer mechanism into place.
	Ribbon is jammed.	Do a self-test with the ribbon cartridge out of the printer.
	Ribbon cables obstructing paper.	Straighten the ribbon cables.
	Mask spring is bent or damaged.	Replace the mask spring.
	Printer has a glitch not defined above.	Do a self-test.

Table 5-3 shows actual displays or visual indications on the computer.

Table 5-3
Terminal Indicators

Display	Cause	Solution
PRINT ERROR: 222 HEADJAM	Printer is jammed. **HEAD JAM** indicator is lit.	Inspect the printer mechanism and clear the obstruction to restore normal printer operation.
PRINT ERROR: 224 LOW VOLTAGE	Printer will not operate.	" *Fixed mount or portable printers:* Recharge or replace the internal battery. " Check power cables. " Have vehicle electrical system repaired if printer is operating on a vehicle battery.
PRINT ERROR: 225 OVER VOLTAGE	Printer will not operate.	Repair vehicle electrical system. Operate printer from an alternative power source until the problem is corrected.
FIX TOP OF PAGE PRESS ENTER *(VOID X VOID X prints on ticket)*	Paper was jarred or pulled out of place.	Press **SET TOP** button to adjust the top of the page.
PRINT ERROR: XXX OFF LINE	No printing takes place.	*Fixed mount or portable printers:* Reconnect the computer in the terminal holder; or check data cable.

Communications Pin-Out Configurations

Below are common cable configurations between a hand-held computer or a dock and the NORAND Printer:

Dock			**Wall Mount Printer**
Signal Name	Pin #	Pin #	Signal Name
	20 ——— 20		DTR (Data Terminal Ready)
	17 ——— 17		RC (Receive Carrier)
	15 ——— 15		TC (Transmit Carrier)
	8 ——— 8		DCD (Data Carrier Detect)
	7 ——— 7		SG (Signal Ground)
	6 ——— 6		DSR (Data Set Ready)
	5 ——— 5		CTS (Clear To Send)
	4 ——— 4		RTS (Ready To Send)
	3 ——— 3		RD (Receive Data)
	2 ——— 2		TD (Transmit Data)

25-Pin DSUB Female   **25-Pin DSUB Male**
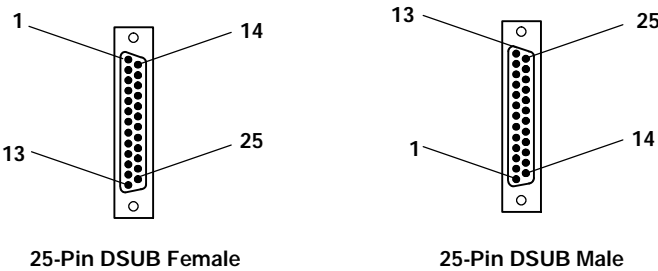
Figure 5-3
25-Pin to 25-Pin Cable (P/N: 206-954-XXX)

Hand-Held Computer   **Printer**

Signal Name	Pin #		Pin #	Signal Name
TXD (Transmit Data)	3	————	4	RCT in
RXD (Receive Data)	2	————	5	RXD out
RTS (Ready To Send)	7	————	3	RTS in
CTS (Clear To Send)	8	————	6	CTS out
DSR (Data Set Ready)	6	————	7	DSR out
SG (Signal Ground)	5	————	9	SG

Chassis Ground   shell —— shield —— shell   Chassis Ground
                                                  8   Terminal Charge out to co

9-Pin DSUB Female   **15-Pin DSUB Female**
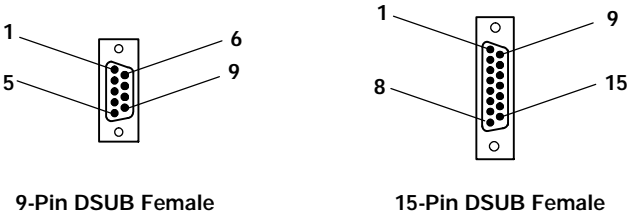
Figure 5-4
9-Pin to 15-Pin Cable (P/N: 226-016-XXX)

Hand-Held Computer   **Wall Mount Printer**

<u>Signal Name</u>   <u>Pin #</u>   shield   <u>Pin #</u>   <u>Signal Name</u>

Chassis Ground   shell ——————— 1
Charge Input   8 ——————— 9
SG (Signal Ground)   9 ——————— 7
DSR (Data Set Ready) in   7 ——————— 6
DTR (Data Terminal Ready) out   2 ——————— 20
CTS (Clear To Send) in   6 ——————— 5
RTS (Ready To Send) out   3 ——————— 4
RXD (Receive Data) in   5 ——————— 3
TXD (Transmit Data) out   4 ——————— 2

15-Pin DSUB Male   **25-Pin DSUB Male**
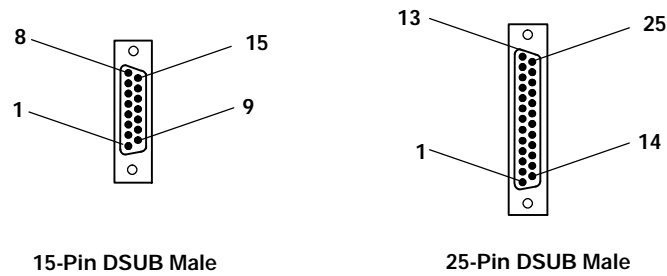
Figure 5-5
15-Pin to 25-Pin Cable (P/N: 216-605-XXX)

Dock

                Printer

<u>Signal Name</u>   <u>Pin #</u>   <u>Pin #</u>   <u>Signal Name</u>

```
2 ——————— 4
20 —————— 2
4 ——————— 3
3 ——————— 5
5 ——————— 6
6 ——————— 7
7 ——————— 9

open ——shield—— shell
```

13 ——   —— **25**   **8** ——   —— **15**

1 ——   —— **14**   **1** ——   —— **9**

25-Pin DSUB Male   **15-Pin DSUB Male**
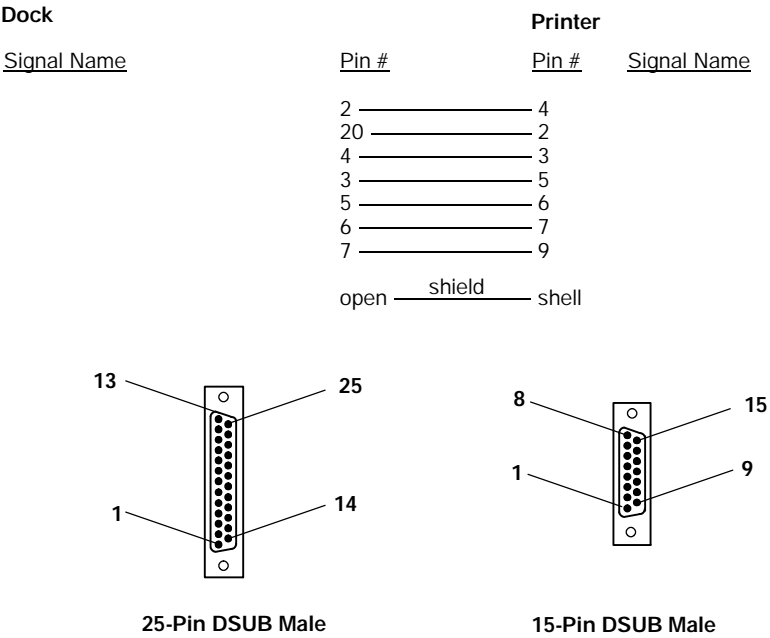
Figure 5-6
25-Pin to 15-Pin Cable (P/N: 226-028-XXX)

The printer has a 25-pin connector with the following pin-out designations and signal mnemonics:

Table 5-4
Printer Communications Connector Pin-outs

15-Pin DSUB	25-Pin DSUB	Signal Name	Type	I/O	Description
1	NC	NC	– – –	– – –	NC (No Connection)
2	20	NC	– – –	– – –	NC
3	4	CTS (Clear To Send)	RS-232	IN	Wakeup
4	2	RXD (Receive Data)	RS-232	IN	Printer's RxD
5	3	TXD (Transmit Data)	RS-232	OUT	Printer's TxD
6	5	RTS (Ready To Send)	RS-232	OUT	IrDA baud rate select
7	6	DTR (Data Terminal Ready)	RS-232	OUT	IrDA baud rate select
8	9	HHC_CHARGE	POWER	OUT	10–15 V, up to 1 A per contact
9	7	GND	POWER		SG (Signal Ground)
10	NC	NC	– – –	– – –	
11	11	IO_SENSE	0–5 V ANALOG	IN	Analog input signal for I/O board type detection. Normally tied to +5 V.
12	18	IOB_RESET	TTL	OUT	Signal to hold I/O board in reset.
13	25	TTL_POWER	POWER	OUT	Power for I/O board logic (never shuts off)
14	NC	NC	– – –	– – –	
NC	NC	NC	– – –	IN	Switched 5 V from terminal.
NC	NC	V_IN	– – –	– – –	Unswitched input power from printer.

INDEX

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NOTE:

This index covers all topics. Page numbers in italics are figures, those in bold are tables titles.