



**NCR 7156 Thermal Receipt and
Impact Slip Printer:
Setup and User's Guide**

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Important Information to the User

In order to ensure compliance with the Product Safety, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable which were shipped with this product or which meet the following parameters:

Power Supply

UL Listed (QGGQ), Class 2 power supply with SELV (Secondary Extra Low Voltage), non-energy hazard output, limited energy source, input rated 100-240 Vac, 1.5/0.8 A, 50/60 Hz, output rated 24 Vdc, 2.3 A.

Use of this product with a power supply other than the NCR power supply will require you to test this power supply and NCR printer for FCC and CE mark certification.

Interface Cable

A shielded (360 degree) interface cable must be used with this product. The shield must be connected to the frame or earth ground connection or earth ground reference at EACH end of the cable.

Use of a cable other than described here will require that you test this cable with the NCR printer and your system for FCC and CE mark certification.

Power Cord

A UL listed, detachable power cord must be used for this product. For applications where the power supply module may be mounted on the floor, a power cord with Type SJT marking must be used. For applications outside the US, power cords which meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications which are in force in the country of use.

**Federal Communications Commission (FCC)
Radio Frequency Interference Statement**

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Communication Cables

Shielded communication cables must be used with this unit to ensure compliance with the Class A FCC limits.

Information to User

This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to contact NCR immediately.

The NCR company is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by NCR. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

**Industry Canada (IC)
Radio Frequency Interference Statement**

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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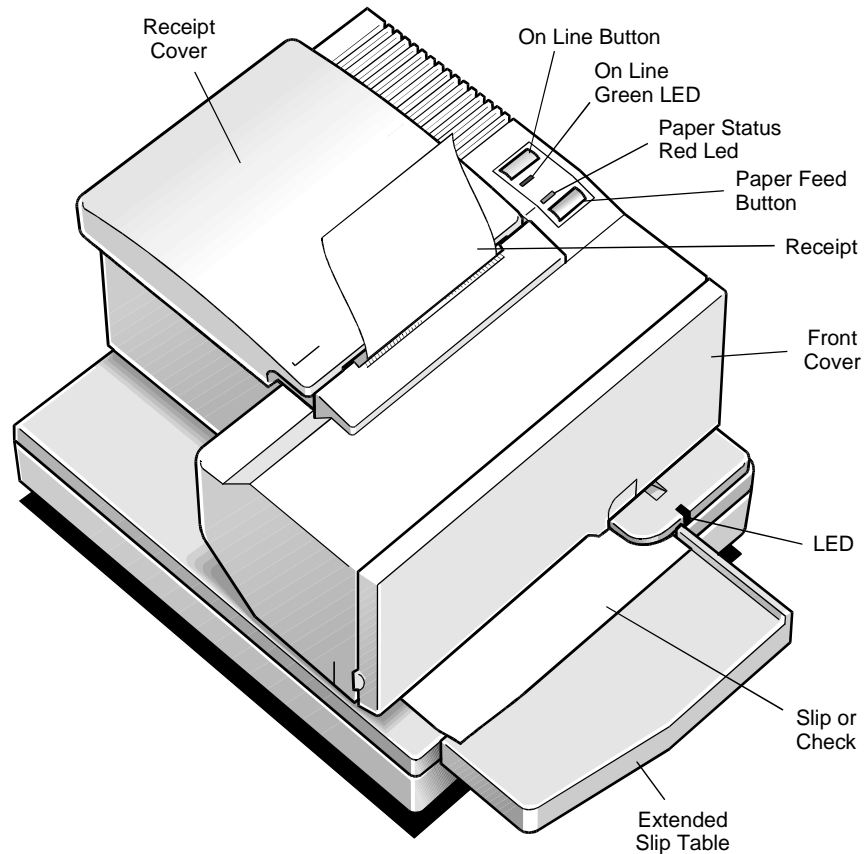
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Revision Record

Issue	Date	Remarks
A	September 97	First printing
B	September 98	Second printing, including minor revisions

Chapter 1: The 7156 Printer



The 7156 printer is a fast, quiet, and very reliable multiple function printer. Relatively small, it is easy to setup and use. It prints receipts, validates and prints checks, and prints on a variety of single- or multiple-part forms. There is no journal as it is kept electronically by the host computer.

The industry-standard RS-232C communication interface allows the 7156 to be connected to any host computer that uses RS-232C. Control codes are provided for easy migration of applications written for Epson as well as other NCR printers.

With thermal printing technology on the more frequently used receipt station, there is no ribbon cassette to change and paper loading is extremely simple. Printing on single- or multiple-part forms, validating checks, and printing checks is also easy in the accommodating slip station. An additional option is the Magnetic Ink Character Recognition (MICR) check reader with parsing which reads account numbers on checks for easy verification. An extended slip table is available for handling large forms and is standard with the MICR check reader option.

Features and Options

The 7156 printer comes with several features and options.

Receipt Station

- Thermal printing
- Standard pitch (host selectable): 15.2 characters per inch, 44 columns
- Compressed pitch (host selectable): 19.0 characters per inch, 56 columns
- Resident bar codes
 - Code 39
 - Code 128
 - UPC-A
 - UPC-E
 - JAN8 (EAN)
 - JAN13 (EAN)
 - Interleaved 2 of 5
 - Codabar
- Drop-in paper loading requiring no spindle or threading paper
- Paper low indicator
- Paper exhaust

Slip Station

- Bi-directional, impact printing
- Standard pitch (host selectable): 13.9 characters per inch, 66 columns
- Compressed pitch (host selectable): 17.1 characters per inch, 80 columns
- Printing of forms up to five plies
 - Front insertion of forms with forms stop
 - Side insertion of forms with override of forms stop
 - Automatic and manual insertion of forms
- Form alignment sensors and Slip In LED indicator
- Horizontal flat-bed slip table with optional extension (standard with MICR check reader)
- Snap-on ribbon cassette

Both Stations

- Variety of print modes: double high (receipt station only), double strike (slip station only), double wide, upside down, and rotated
- Two resident character sets:
 - PC Code Page 437 (US)
 - PC Code Page 850 (Multilingual)
- 16K RAM for downloaded character sets or bit-mapped graphics (such as logos)

General Features

- Cover open sensors
- Industry standard RS-232C communication interface
- History EEROM for custom settings
- Power and communication support for a remote 2x20 pass-through display
- Audible tone (controlled by application)

Note: The 7156 does not use a paper journal. The journal is kept electronically by the host computer.

Options

- Magnetic Ink Character Recognition (MICR) check reader built into the slip station for verifying checks (includes custom MICR field parsing)
- Extended slip table for handling large forms (standard with MICR check reader)
- Paper cutter (receipt station)
- Remote power supply
- Two cash drawer drivers
- Communication cable

Chapter 2: Setting Up and Using the Printer

What Is in the Box?

The following items are packed in the shipping box (printers shipped in bulk may not include all of these items):

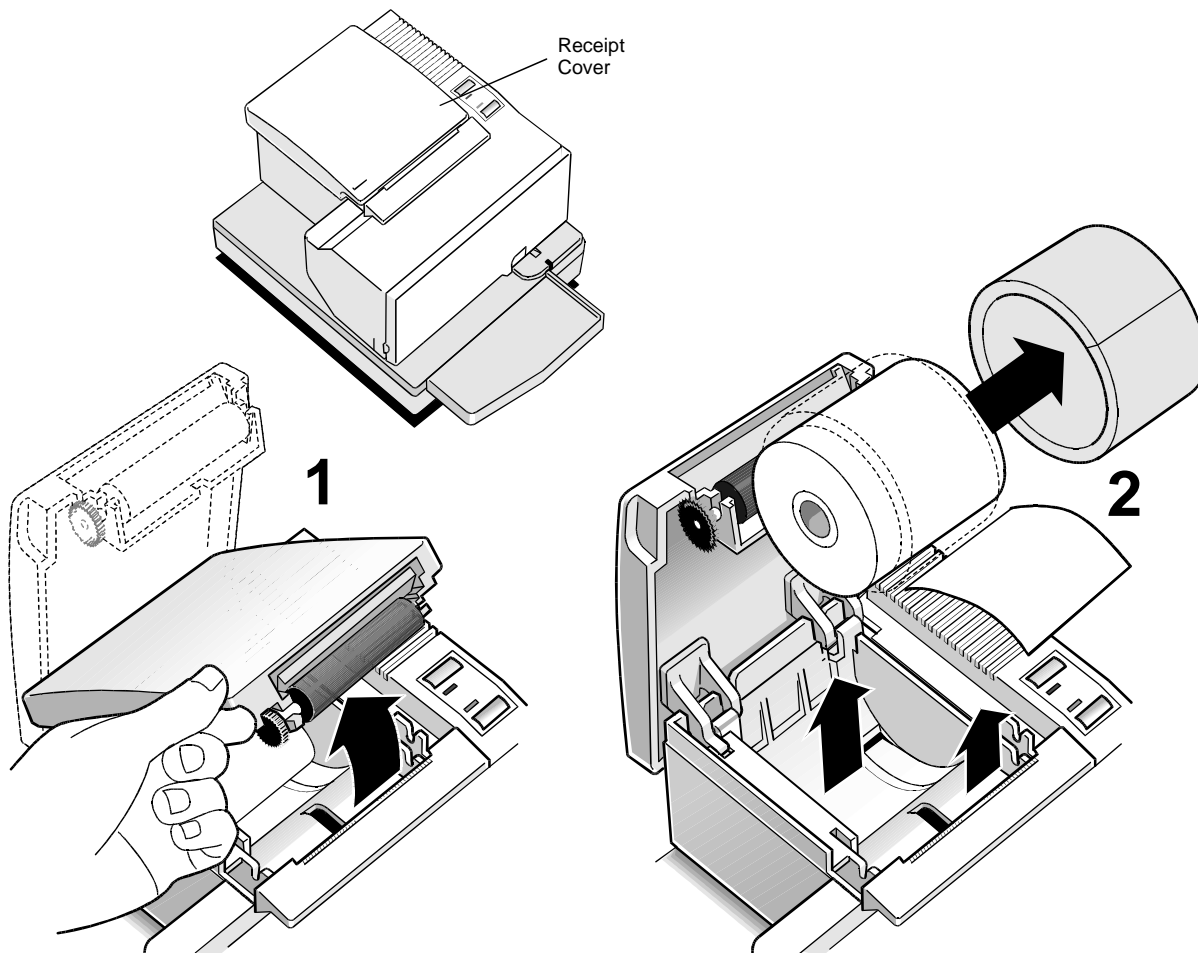
- Printer enclosed in a plastic bag and foam pack
 - Thermal receipt paper roll (inside receipt bucket)
 - Test printout protecting the thermal printhead (inside receipt bucket)
 - Cardboard support for cantilever (on slip table)
 - Foam restraint for carriage (behind front cover)
- Power supply with cable connecting to printer and power supply cord connecting to power outlet (only if ordered with the printer)
- Ribbon cassette
- Clips for securing cables under the base
If not in the box, the clips will be attached or molded to the base.
- Installation report card (please complete this form and return to NCR)
- 7156 Thermal Receipt and Impact Slip Printer: Setup and User's Guide* (this booklet)

These items may be ordered as options from NCR and will be shipped separately:

- Communication cable (from host computer to printer)
- Cash drawer with cables (may be ordered from other equipment suppliers: see "Ordering Other Supplies" in chapter 3)

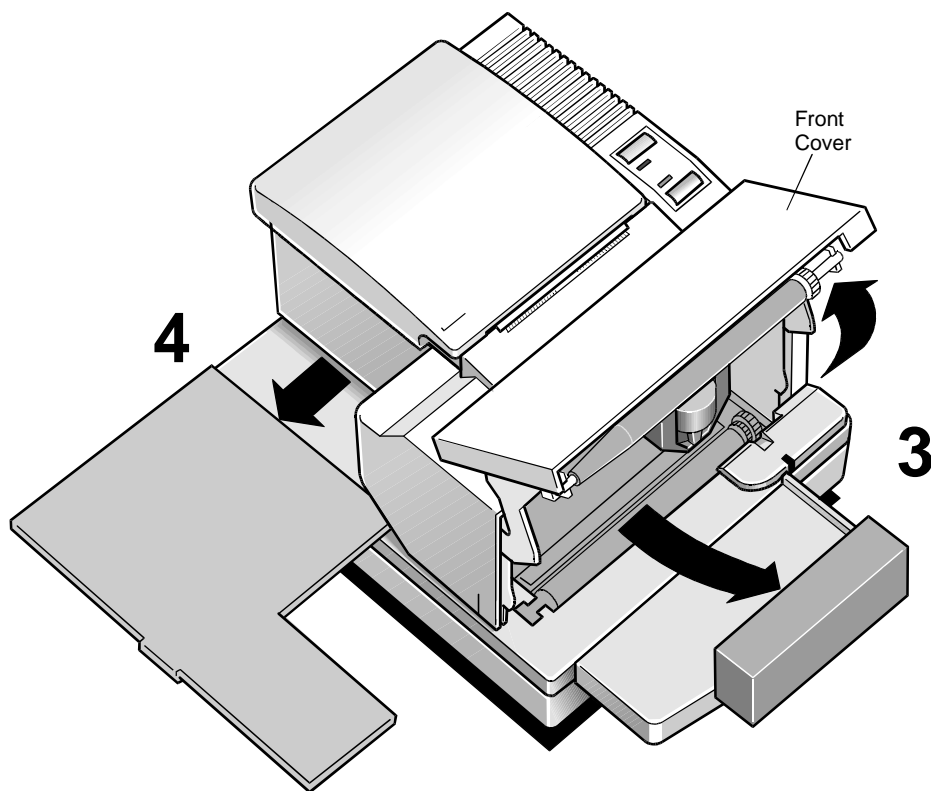
Removing the Packing Material

1. Once the printer is removed from the foam pack and plastic bag, open the receipt cover by pulling up on the front left corner.
2. Remove the paper roll, discard any packing material, and remove the test printout from inside the receipt bucket.



3. Open the front cover and remove the foam restraint.
4. Remove the cardboard support from the slip table.
5. Remove the ribbon cassette and cables from the box.
6. Save all packing materials for future storing, moving, or shipping the printer.
7. Complete the Installation report card and send it to NCR.

Caution: Remove the foam restraint and the cardboard support before operating the printer.



Repacking the Printer

Review the illustrations on the previous two pages to pack the printer.

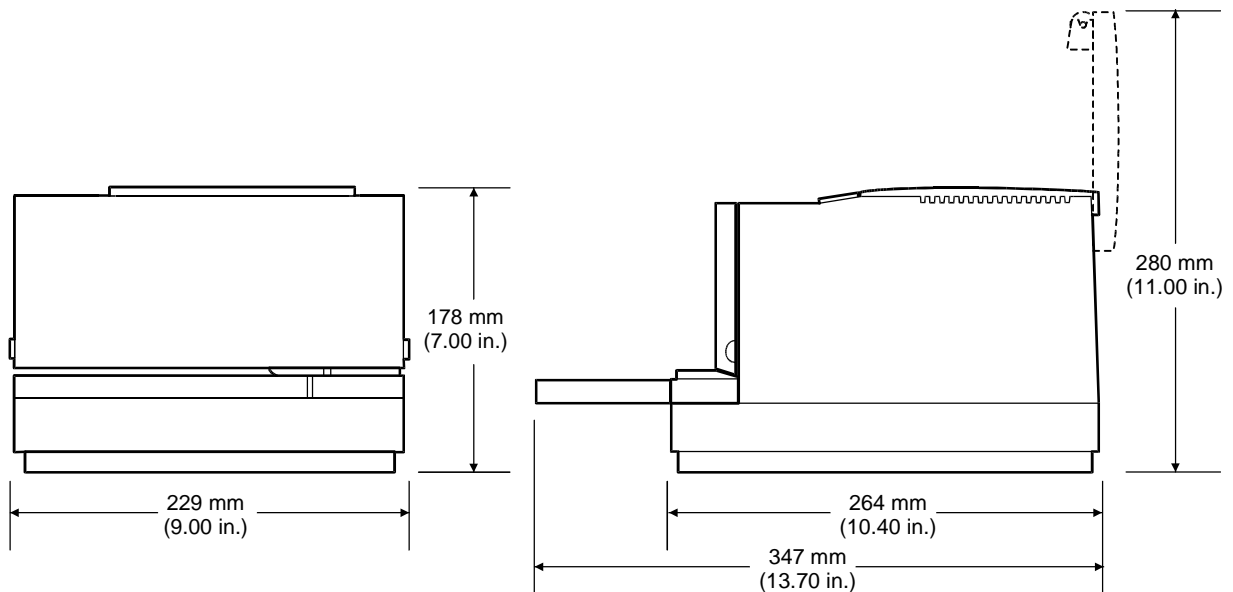
1. Place receipt paper between the receipt cover and the printhead for protection.
2. Remove the ribbon cassette, move the carriage to the right, and place the foam restraint between the left side of the printer and the carriage to protect the carriage.
3. Place the cardboard support on the slip table.
4. Place the printer in the plastic bag and foam pack, place the packed printer in the box and secure the box with packing tape.
5. If you are sending the printer to NCR for repair, call your NCR-authorized service representative for instructions on where to send the printer.
Be prepared to answer questions concerning shipping and billing.

Choosing a Location

The 7156 printer takes up relatively little counter space and may be set on or near the host computer. Make sure there is enough room to open the receipt cover to change the paper and to open the front cover to change the ribbon cassette. The illustration shows the actual dimensions of the printer, but leave several inches around the printer for connecting and accessing the cables.

Note: The optional Magnetic Ink Character Recognition (MICR) check reader feature has been factory adjusted for a normal operating environment with a host computer. However, additional devices, such as CRT monitors, or large metal surfaces that are near the printer can affect the printer's magnetic field, causing intermittent reading errors when the MICR check reader is in operation.

This condition can be easily diagnosed by checking the MICR check reader and adjusting it if the factory setting has been altered by your operating environment. See the Owner's Guide for more information.



Connecting the Cables

There are three different types of cables that connect to the printer:

- Power supply cable supplying power from the power supply
- Communication cable connecting the printer to the host computer
- Cash drawer cables connecting the printer to one or two cash drawers

Caution: Disconnect the power before connecting the cables. Always connect the communication cable and cash drawer cables before connecting power to the power supply. Always disconnect power to the power supply before disconnecting the communication and cash drawer cables.

Follow these steps to connect the cables. See the illustration on the facing page.

1. Unplug the power supply from its power source.
2. Connect the power and communication cables to their respective connectors under the printer as shown in the illustration.

Be sure to screw the communication cable to the connector on the printer.

3. Route the cables through the cable clamps on the bottom of the printer, then through the two slots in the cable access cover as shown in the illustration.

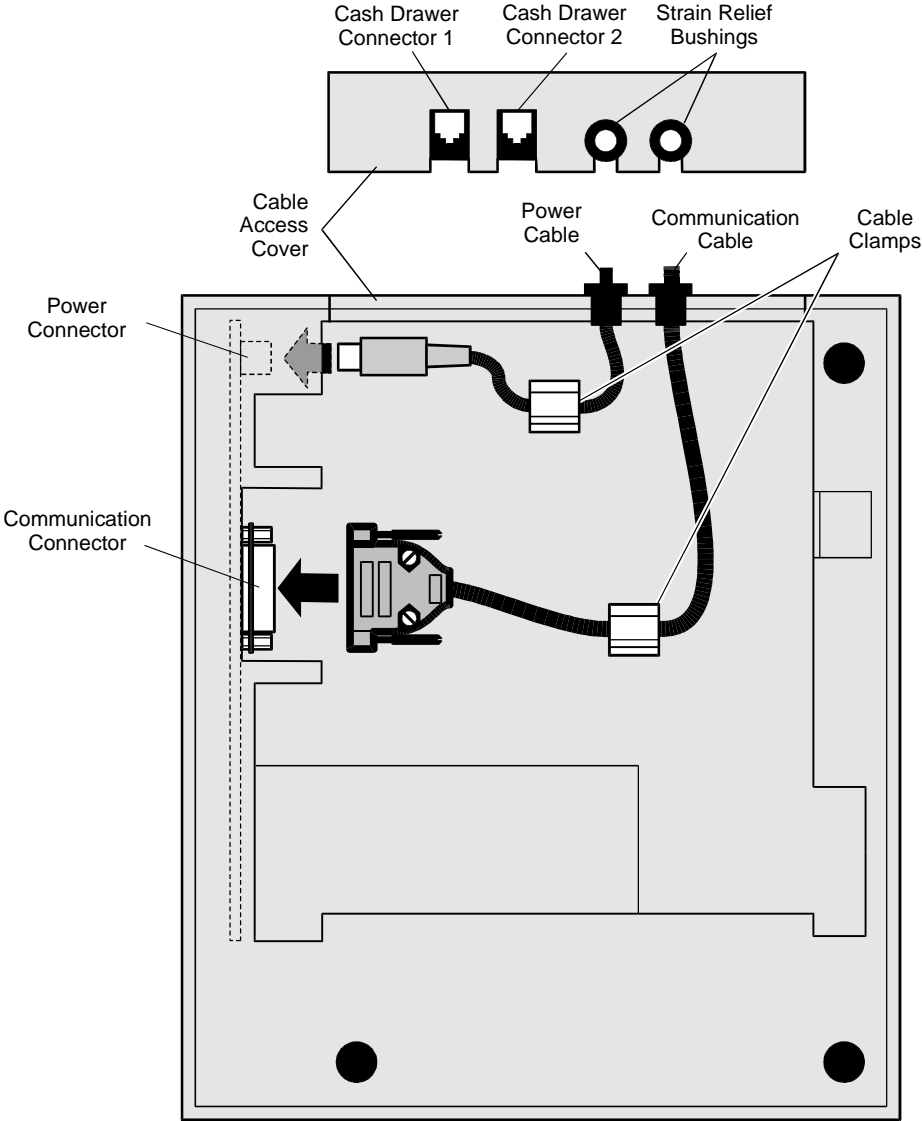
Note: The strain relief bushings are shipped in the box and help secure the cables. The cable clamps may be shipped in the box or may be attached or molded to the bottom of the printer. Use the cable clamps or strain relief bushings, or both, to keep the cables from being unplugged which may damage the connectors or interrupt a transaction.

4. Connect the communication cable to the appropriate host computer connector.
5. Connect the cash drawer cables to the printer and cash drawers.

The connectors are standard phone jacks located at the rear of the printer.

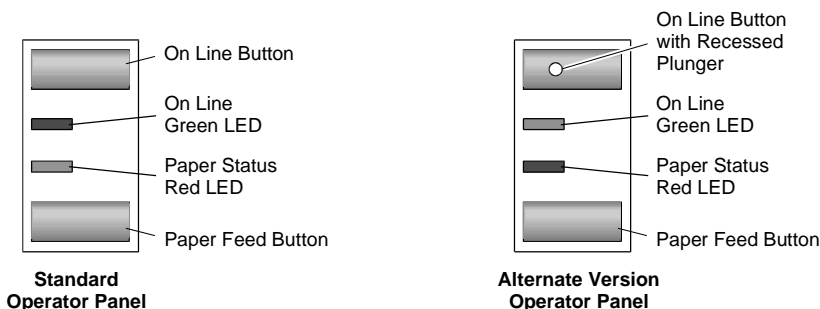
6. Plug the power cord into the power supply, then plug the power supply into an outlet.

At this point, the printer receives power. If the On Line LED (green) is on, the printer is on-line. Otherwise, the printer is off-line.



Bottom of the Printer

Turning On the Printer



Note: The operator panel may differ from the standard version (left) depending on the model. On models matching the alternate version (right), use a paper clip or pointed object to press the plunger to put the printer on- or off-line.

1. Press the On Line button (or plunger) to put the printer on-line, if it's not already on-line.

The printer goes through a self-test routine to ensure everything is working properly then “beeps.” The On Line light (green) comes on indicating the printer is on-line. When the printer has completed its “startup” cycle, it is ready to receive data.

If the On Line light does not come on, the Paper Out light or the LED on the slip table flashes, or the host computer indicates that there is a problem, see the 7156 Owner's Guide for more information.

2. Press the On Line button (or plunger) again to put the printer off-line.

Note: The printer receives power when the power supply is on even if the printer is off-line. To completely remove power, press the On Line button (or plunger) to put the printer off-line (On Line light is off), then unplug the power supply from the outlet.

Loading and Changing the Receipt Paper

Although the illustrations show a used roll being removed, the instructions apply to loading paper for the first time.

Change the paper when either of the following two conditions occurs:

- Paper Status LED (red) flashes: the paper is low

There are approximately 1 ½ to 7 ½ meters (5-25 feet) of paper remaining on the roll. Change the paper as soon as possible to avoid running out part way through a transaction.

Depending on the application program, the host computer may alert you when the paper is low.

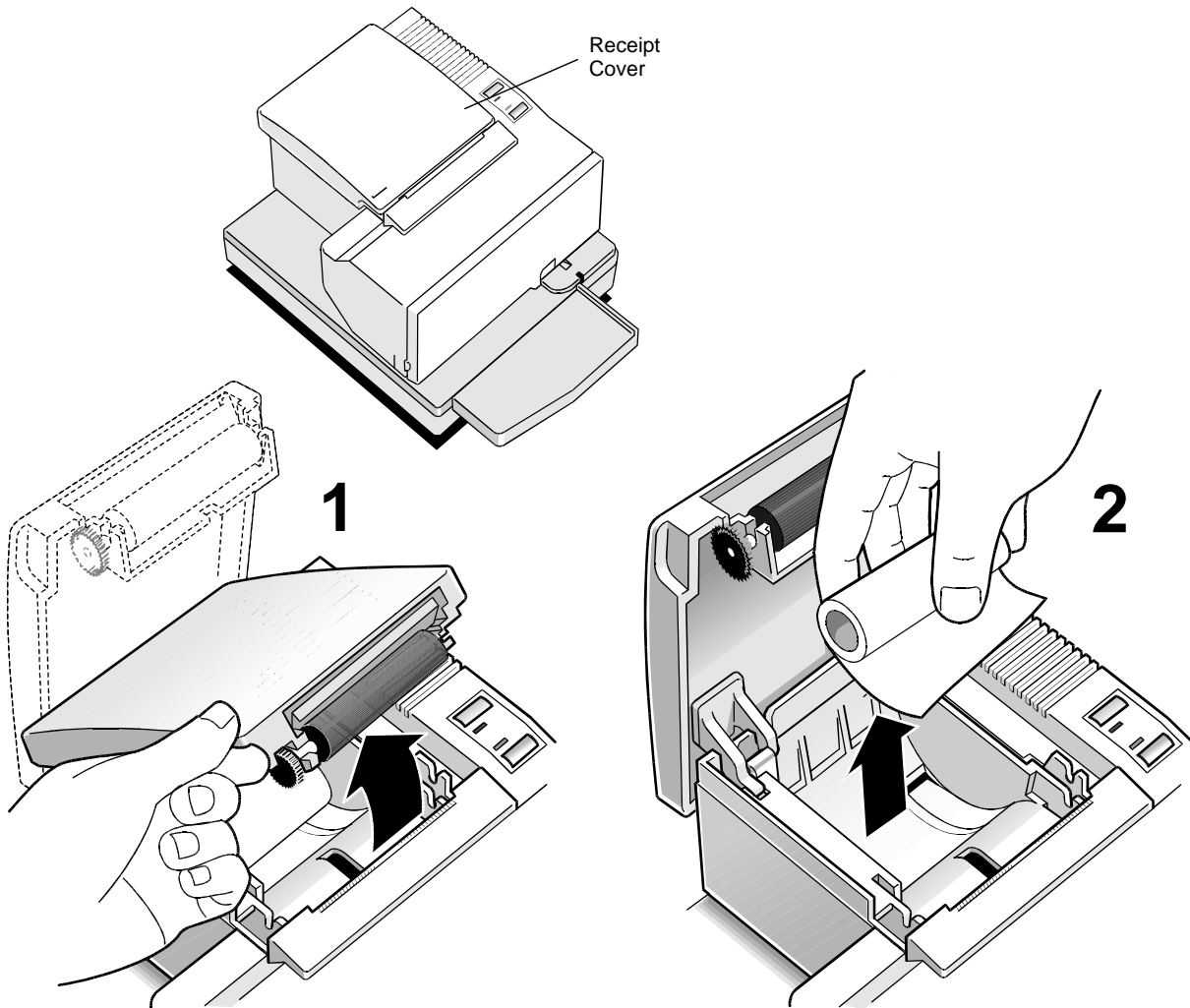
- Paper Status LED (red) turns on: the paper is out

Change the paper immediately or data may be lost.

Caution: Do not operate the printer or host computer if the printer runs out of paper. The printer will not operate without paper, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data may be lost.

Removing the Paper Roll

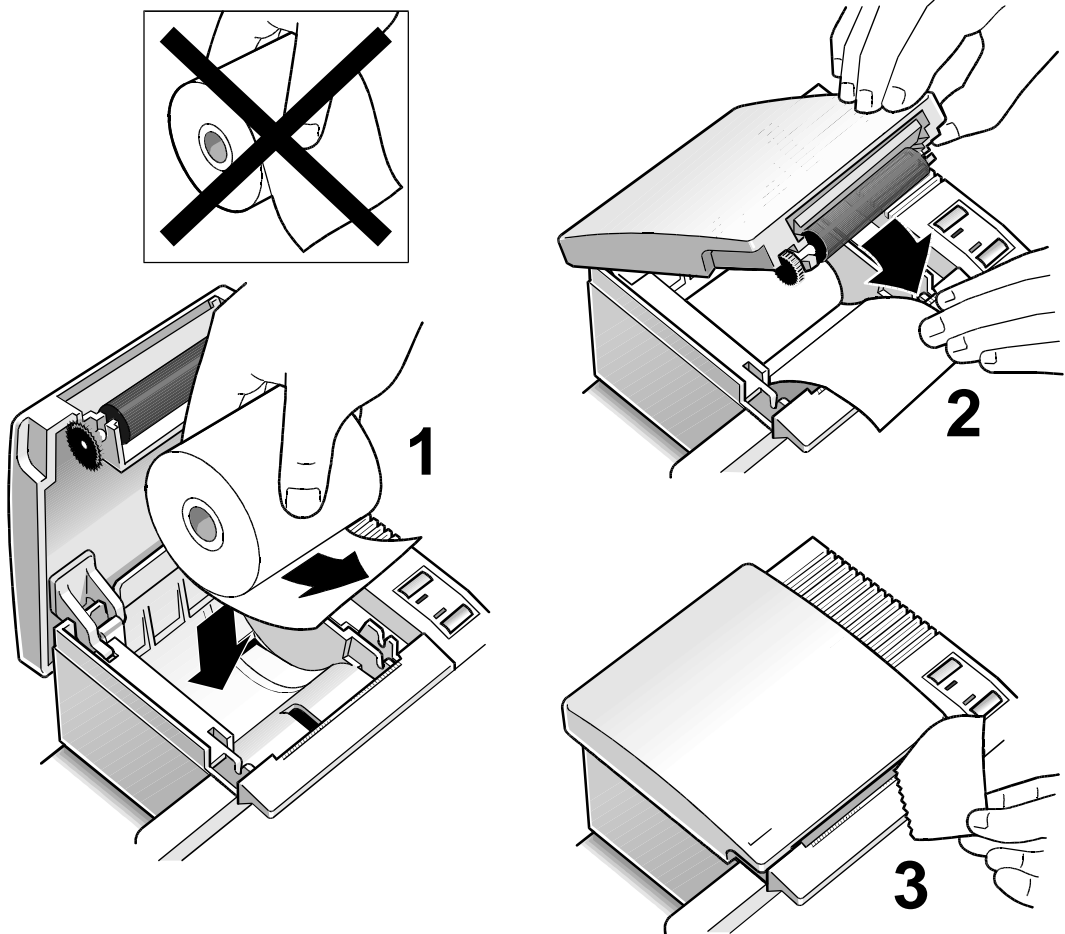
1. Open the receipt cover.
2. Remove the used roll.



Putting In the Paper Roll

Note: Tear off the end of the new roll so that the edge is loose.

1. Place the new roll in the bin with a little extra paper extending over the front. Be sure the paper unrolls from the bottom of the roll. Otherwise the paper will not be printed on because the thermal coating will be on the wrong side.
 2. Close the receipt cover.
 3. Remove the excess paper by tearing it against the tear-off blade.
- In addition to the tear off-blade, some printers use a knife to cut the receipt.

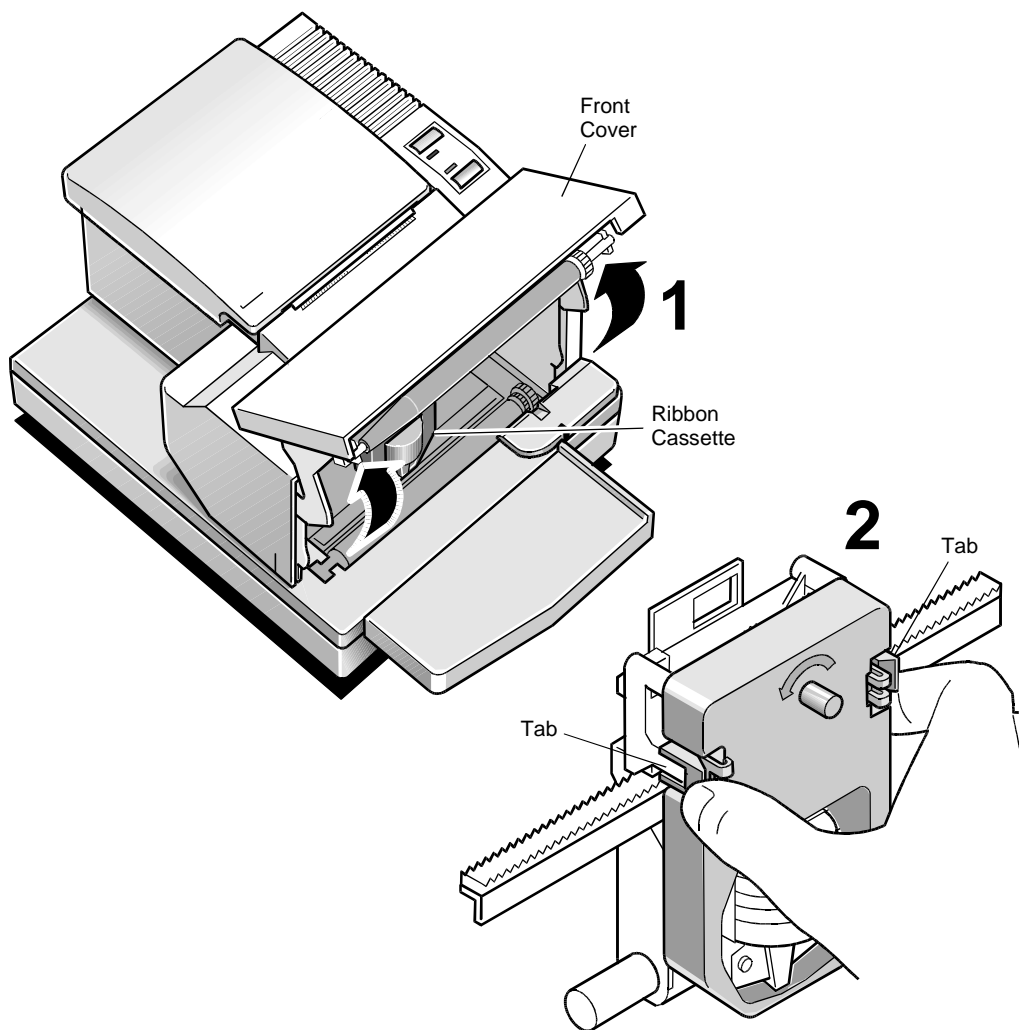


Putting In and Changing the Ribbon Cassette

Change the ribbon cassette when the print is too light or the ribbon is frayed.

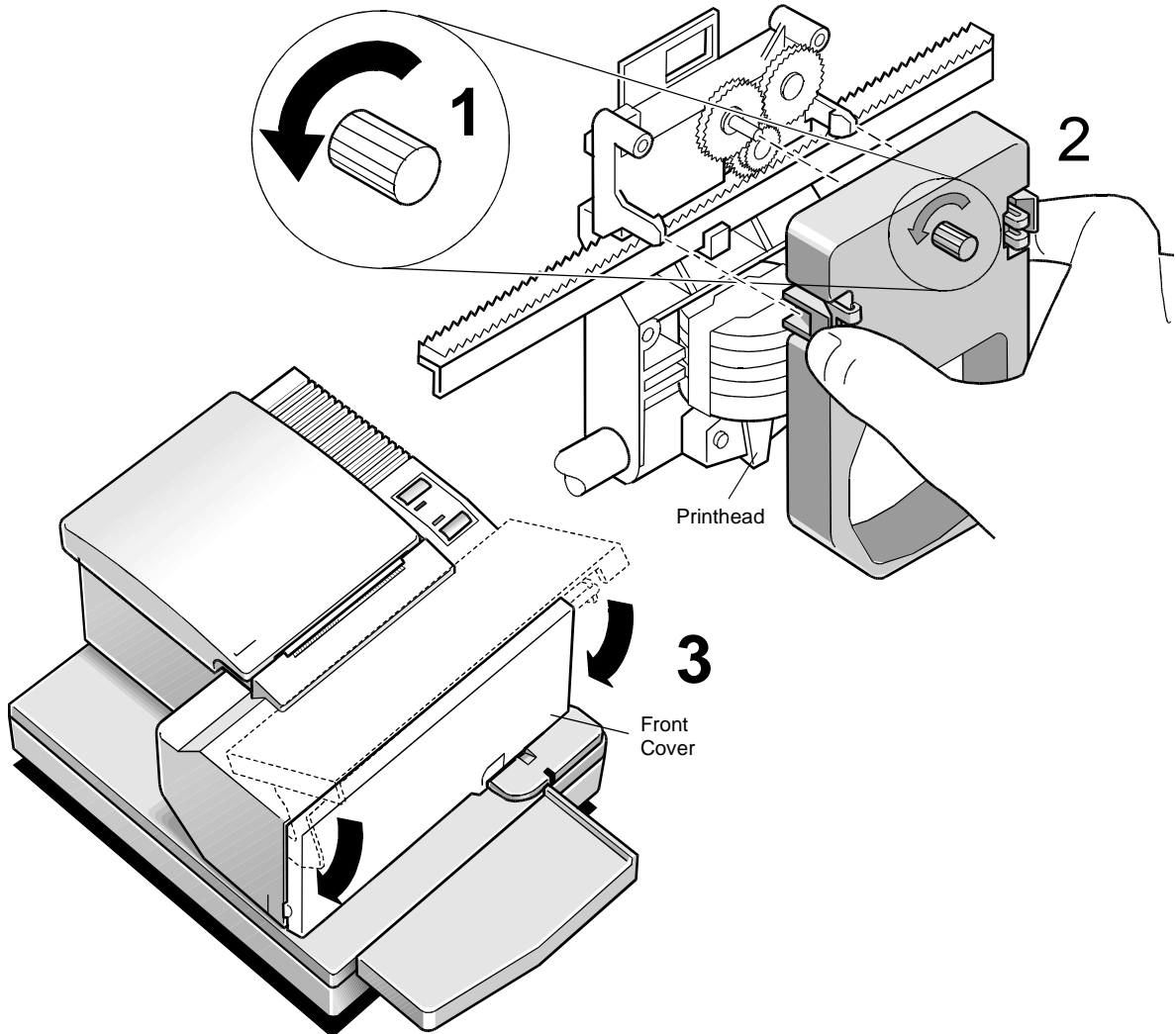
Removing the Ribbon Cassette

1. Open the front cover.
2. Squeeze the tabs on the cassette and pull the cassette out of the printer.



Putting In the Ribbon Cassette

1. Tighten the ribbon by turning the knob in the direction of the arrow.
2. Position the ribbon cassette on the carriage and snap it into place.
Be sure the ribbon is underneath the printhead.
3. Close the front cover.



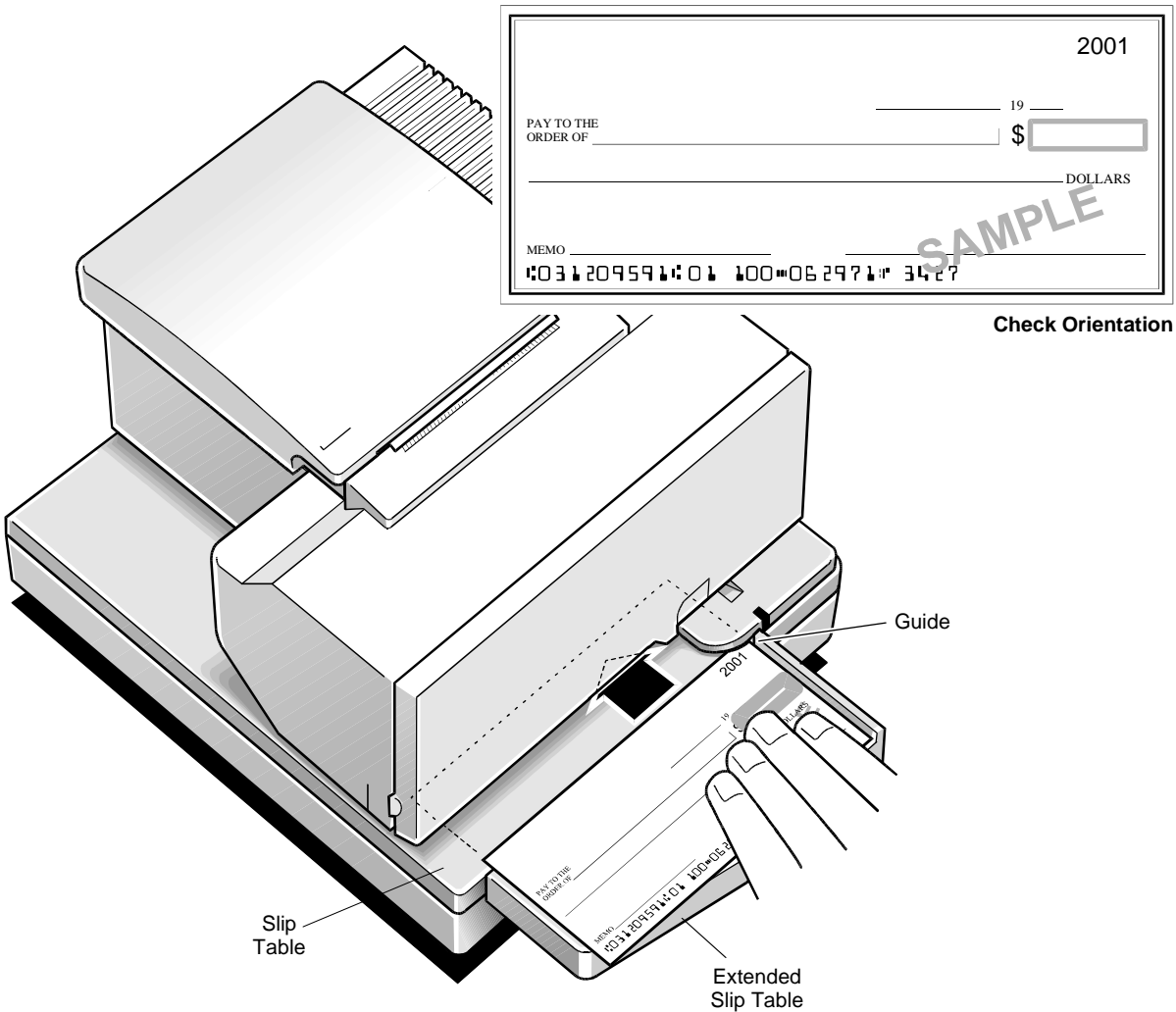
Printing on Forms or Checks

There are several types of transactions that require you to insert a form or check into the printer:

- Credit card transaction (some credit card transactions may be printed on the receipt station and not require any forms)
- Multiple-part forms such as credit transactions or merchandise returns
- Electronic funds transfers
- Check printing (printing the date, payee, and amount on the check face)
- Check endorsement

Although the illustration on the facing page shows a check being inserted into the printer, the instructions apply to any type of form. The 7156 can print on forms up to five-parts thick. See "Ordering Forms" later in this book for more information about the type of forms that can be used.

1. Insert the form or check (check shown in the illustration) from the front and place it on the slip table top first and with the print side up.
If the form is extra long, you may need to insert it from the side.
2. Slide the form or check to the right until it lines up against the guide (wall).
If the form is extra long, you may need to slide it over the form stop to disengage it. In this case, you will need to mark the slip table for lining up the form for the proper placement of the print on the form.
3. Slide the form or check toward the back of the printer until it contacts the form stop (it won't be able to go any further);
Or, align the form or check with any preset mark you may have made on the slip table for custom forms.
The green LED on the slip table turns on when the form or check is properly inserted (the form has to cover two sensors on the slip table).
4. Follow the instructions from the host computer.
The printer begins printing.
5. Remove the form or check after it has been fed back out.
6. Follow the instructions from the host computer to finish the transaction.



Validating and Verifying Checks

Note: If the MICR check reader feature is present, checks are verified then validated.

1. Insert the check from the front and place it on the slip table face down as shown in the illustration on the facing page.
2. Slide the check to the right until it lines up against the guide (wall).
3. Slide the check toward the back of the printer until it contacts the form stop (it won't be able to go any further);

Or, align the check with any preset mark you may have made on the slip table.

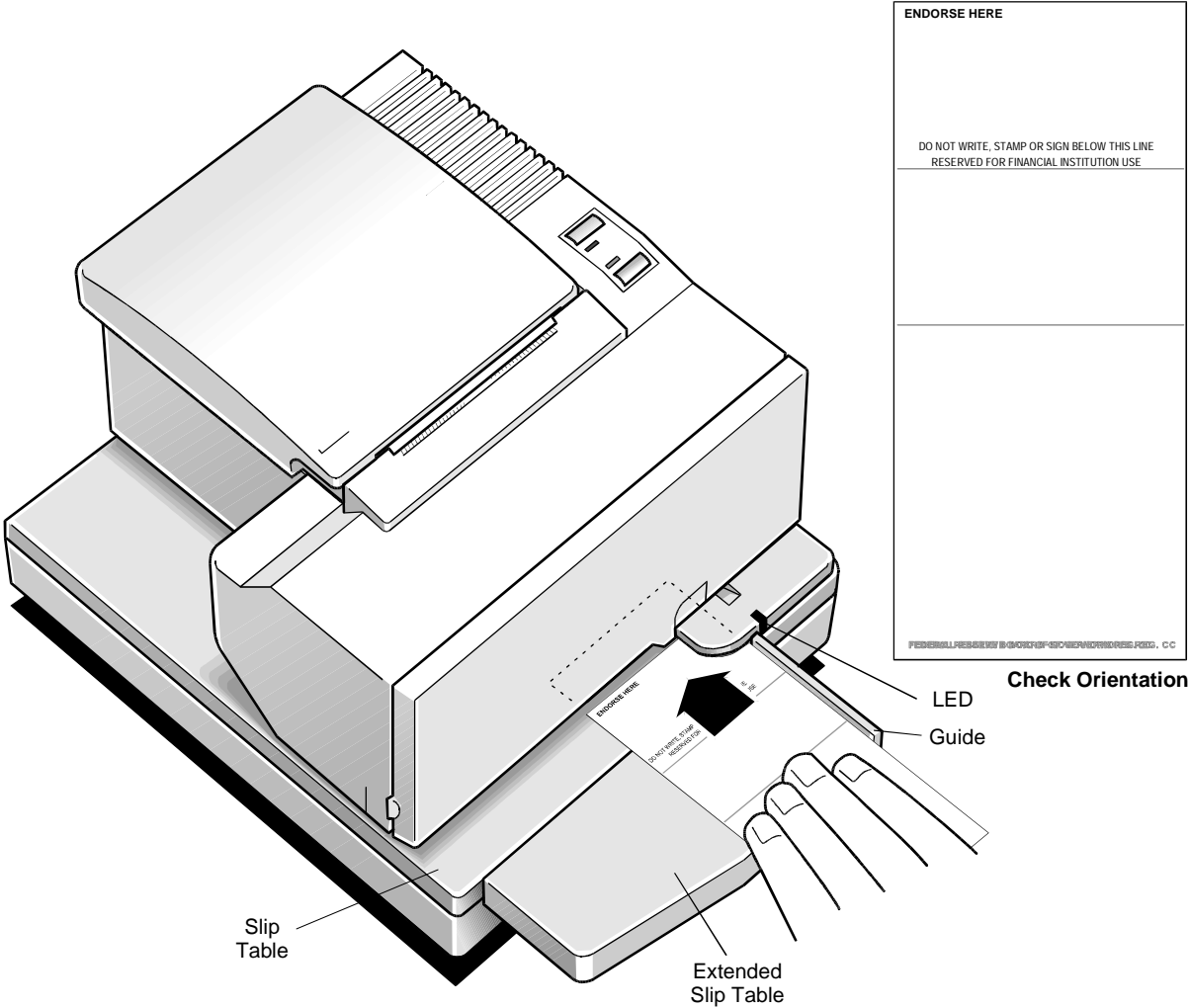
The green LED on the slip table turns on when the form or check is properly inserted (it has to cover two sensors on the slip table).

4. Follow the instructions from the host computer.

If the MICR check reader feature is present, the check is fed in and out while the check numbers are read. If the check is verified as good, it is then validated. If the check is not verified as good, it is not validated.

Note: Do not hold or keep the check from moving during the MICR check reader transaction or the check numbers will not be read accurately.

5. Remove the check after it has been fed all the way back out.
6. Follow the instructions from the host computer to finish the transaction.



Testing the Printer

Test the receipt station using the simple tests described here. Additional tests are described in the “Diagnostics” chapter in the Owner's Guide. The tests print data about the printer's configuration which is useful to a service representative if there is a problem. The tests also print the character sets and cut the paper. The tests continue until you stop them. Several feet of paper can be used to print one pass.

Running the Print Test by Power Cycling the Printer

1. Press the On Line button (or plunger) to put the printer off-line.
Use a paper clip or other pointed object to depress the plunger on models with that item. The On Line light (green) goes off.
2. Press and hold down the Paper Feed button, then press the On Line button (or plunger) to begin the test.
3. Let go of the Paper Feed button once the printing begins.
The printer prints the data and character sets until you stop it (see the sample).
4. To stop the test, press the Paper Feed button.
The printer is ready to receive and print data from the host computer.

Running the Print Test by Opening and Closing the Cover

1. Press the On Line button (or plunger) to put the printer off-line.
Use a paper clip or other pointed object to depress the plunger on models with that item. The On Line light (green) goes off.
2. Open the receipt cover by pulling up on the front left side of the cover.
The Paper Status light (red) comes on indicating the receipt cover is open and that the printer cannot receive or print data (not that the paper is out).
3. Press and hold down the Paper Feed button while closing the receipt cover.
4. Let go of the Paper Feed button once the printing begins.
The printer prints the data and character sets until you stop it (see the sample).
5. To stop the test, press the Paper Feed button.
The printer is ready to receive and print data from the host computer.

Sample Print Test

```

7156 Thermal/Impact
* * 17 LPS Receipt * *

Firmware CRC is 27C6

Switches
 1 2 3 4 5 6 7 8
OFF OFF OFF OFF ON OFF OFF ON

Straps
RS232 comm Knife
MICR DC offset is 81

Non-volatile memory
RS232 setup
-print ? for error
-4K data buffer

Thermal Head Setting 1
Partial Cut Setting 5
Datascope Mode OFF
Print and feed w/ <CR>

thermal lines9,144,870
knife cuts 217,131
hours on 357

CODE PAGE 437
! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5
6 7 8 9 : ; < = > ? @ A B C D E F G H I J K
L M N O P Q R S T U V W X Y Z [ \ ] ^ _ ` a

```

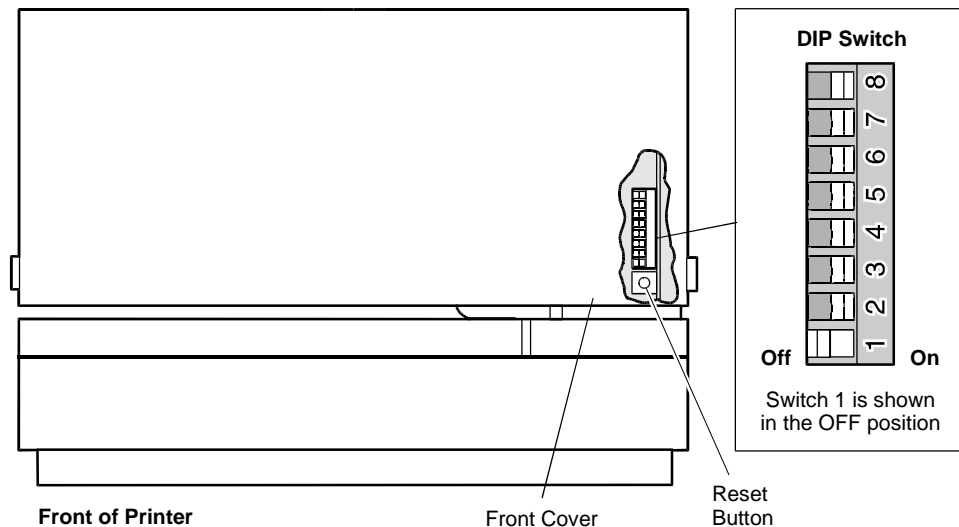
Setting Switches

A group of switches, called DIP switches, are used to set communication parameters for the RS-232C communication interface. The switches are located behind the front cover.

Note: The DIP switches are used for other functions. See the “Diagnostics” chapter in the Owner's Guide for more information.

Caution: The DIP switches are set at the factory to predetermined settings and should generally not be changed. If you must change the settings do so carefully to avoid changing other functions.

Before changing any of the switches, first run the print test to print out the current switch settings on the receipt. See “Testing the Printer” earlier in this book for instructions on running the print test and for a sample printout.



Note: Switch 1 is shown in the Off position for reference.

Note: Some 7156 models may appear slightly different from what is shown in the illustration. The procedures are the same for all models unless otherwise noted.

Use a paper clip or other pointed object to set the switches.

1. Open the front cover.
2. Set the switches to the desired settings shown in the table.

Switch 1 must be set to Off for the on-line mode. Setting switch 1 to On puts the printer in level 1 diagnostics (setup mode). Changing the other switches in level 1 diagnostics can change settings that have been pre-set at the factory. See the "Diagnostics" chapter in the Owner's Guide for more information.

3. Close the cover.

DIP Switch Settings for RS-232C Parameters

Switch	Settings	Description	
1	OFF	On-line Mode (default)	
	ON	Level 1 Diagnostics (setup mode)	
2	OFF	DTR/DSR Protocol (default)	
	ON	XON/XOFF Protocol	
3	OFF	Without Parity (default)	
	ON	With Parity	
4*	OFF	Odd Parity	
	ON	Even Parity	
5, 6	5	6	
	OFF	OFF	19,200 Baud
	ON	OFF	9600 Baud (default)
	OFF	ON	4800 Baud
	ON	ON	1200 Baud

*Switch 4 is not used if the parity is disabled (switch 3 set to OFF).

Cleaning the Printer

There is no customer maintenance required for the 7156 printer. However, you may occasionally clean the cabinet as needed to remove dust and finger marks. Use any household cleaner designed for plastics, but test it first on a small unseen area. The cabinet materials and finish are durable and are resistant to the following items:

- Cleaning solutions
- Lubricants
- Fuels
- Cooking oils
- Ultraviolet light

If the receipt paper bucket is dirty, wipe it with a clean, damp cloth.

Caution: Do not spray or try to clean the thermal printhead or the inside of the printer with any kind of cleaner as this may damage the thermal printhead and the electronics.

If the printhead appears dirty, wipe it with cotton swabs and rubbing alcohol. If spotty or light printing problems persist after cleaning the thermal printhead, contact your NCR authorized service organization.

Note: The thermal printhead does not normally require cleaning if the recommended paper grades are used. If non-recommended paper has been used for an extended period of time, cleaning the printhead with cotton swabs and rubbing alcohol will not be of much benefit. See “Chapter 3: Ordering Paper and Supplies” for recommended paper.

Chapter 3: Ordering Paper and Supplies

Ordering Thermal Receipt Paper

The 7156 requires "fax grade" thermal paper with the following dimensions:

Diameter	Length	Width
80 mm max. (3.15 inches)	83 meters (273 ft.)	80 mm \pm .5 mm (3.15 \pm .008 inches)

The paper must not be attached at the core. Use paper with a colored stripe at the end to indicate that the paper is running low.

To order thermal receipt paper, contact your sales representative or order from NCR at the following address or toll free number:

NCR

Media Products Division

9995 Washington Church Road

Miamisburg, OH 45342

Voice: 1(800)543-8130 (toll free), or local listing of Media Products sales office

Ordering Forms

The 7156 prints on single- or multiple-part forms in the slip station (up to five-part forms). Forms and slips must meet the following requirements:

- Front insertion (minimum):
51 mm (2.0 inches) wide
70 mm (2.75 inches) long
- Side insertion (minimum):
203 mm (8.0 inches) wide
51 mm (2.0 inches) long
- Single-ply forms should be on paper that is greater than 15 pounds
- Multiple-part forms (up to five parts) should be no thicker than .406 mm (.016 inches)

To order forms, contact your sales representative or order from NCR at the following address or toll free number:

NCR

Media Products Division

9995 Washington Church Road

Miamisburg, OH 45342

Voice: 1(800)543-8130 (toll free), or local listing of Media Products sales office

Ordering Ribbon Cassettes

To order ribbon cassettes, contact your sales representative or order from NCR at the following address or toll free number:

NCR

Media Products Division

9995 Washington Church Road

Miamisburg, OH 45342

Voice: 1(800)543-8130 (toll free), or local listing of Media Products sales office

Stock Numbers: 198161 (purple ribbon cassette—3 million characters)

198145 (black ribbon cassette—3 million characters)

Ordering Other Supplies

Contact your sales representative to order the supplies listed in the table.

Item	Type	Number
Power supply with attached cable to printer and U.S. power supply cord		7156-K330
Power supply, attached cable		7156-K301
Power supply cord (to outlet)	United States	7156-K320
	International (no plug)	7156-K321
	United Kingdom	7156-K322
	S.E.V.	7156-K323
	Australia	7156-K324
	International (with plug)	7156-K326
RS-232C Communication cables		
25-pin (host) to 9-pin	(3 meters—9.8 ft.)	1420-C001-0030
9-pin to 9-pin	(3 meters—9.8 ft.)	1416-C057-0030
Extended Slip Table (Standard)		7156-K280
Extended Slip Table (Short)		7156-K281
Cash drawer		7052-K657 (Switchable for Drawer 1 or Drawer 2)

Ordering Documentation

Contact your sales representative to order the following documentation:

- 7156 Thermal Receipt and Impact Slip Printer: Owner's Guide* (BD20-1436-A)
- 7156 Thermal Receipt and Impact Slip Printer: Service Guide* (BD20-1437-A) (includes the MICR Operation and Troubleshooting Guide and the Preventative Maintenance Guide)

BD20-1435-A

Issue B

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