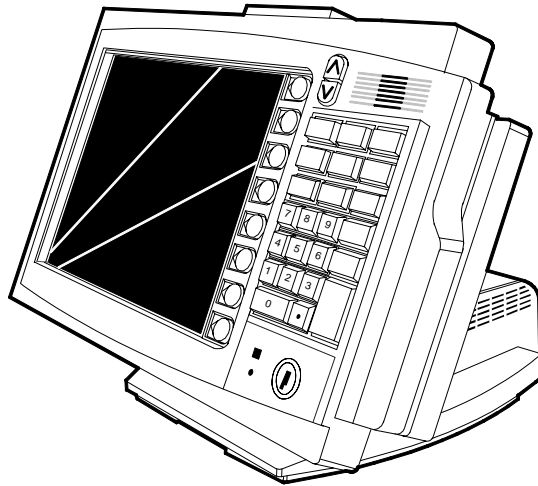


NCR 7455 Retail Terminal

Release 1.0

Site Preparation



18427

B005-0000-1286

Issue A

The products described in this book are licensed products of NCR Corporation.

NCR is a registered trademark of NCR Corporation.

Pentium is a registered trademark of Intel Corporation.

It is the policy of NCR Corporation (NCR) to improve products as new technology, components, software, and firmware become available. NCR, therefore, reserves the right to change specifications without prior notice.

All features, functions, and operations described herein may not be marketed by NCR in all parts of the world. In some instances, photographs are of equipment prototypes. Therefore, before using this document, consult with your NCR representative or NCR office for information that is applicable and current.

To maintain the quality of our publications, we need your comments on the accuracy, clarity, organization, and value of this book.

Address correspondence to:

Manager, Information Products
NCR Corporation
2651 Satellite Blvd.
Duluth, GA 30096

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Preface

Audience

This book is written for hardware installer/service personnel, system integrators, and field engineers.

Notice: This document is NCR proprietary information and is not to be disclosed or reproduced without consent.

Safety Warnings

This equipment is intended for use with an IT power system with a line-to-line voltage of 240 V or less.

Fuse Replacement

Caution: For continued protection against risk of fire, replace only with the same type and ratings of fuse.

Attention: Pour prévenir et vous protéger contre un risque de feu, remplacer la fusible avec une autre fusible de même type, seulement.

Power Supply Cord Used as Disconnect Means

Caution: The power supply cord is used as the main disconnect device. Ensure that the socket outlet is located/installed near the equipment and is easily accessible.

Attention: Le cordon d'alimentation est utilisé comme interrupteur général. La prise de courant doit être située ou installée à proximité du matériel et être facile d'accès.

Warning: **DO NOT connect or disconnect the transaction printer while the terminal is powered on. This can result in system or printer damage.**

Lithium Battery Warning

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Attention: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Peripheral Usage

This terminal should only be used with peripheral devices that are certified by the appropriate safety agency for the country of installation (UL, CSA, TUV, VDE) or those which are recommended by NCR Corporation.

Environmental Consciousness

NCR is demonstrating its concern for the environment by designing an intelligent power management system into this terminal that operates efficiently whether the system is in a stand-alone or network environment.

About this Book

This book provides site preparation information for terminal components. Peripheral component and AC wiring site preparation information is NOT provided in this book. The associated reference documents are listed in the “Related Site Preparation Data” section.

This book contains the information necessary for the preparation of a site that conforms to NCR specifications. It is very important that the site complies with the requirements specified in the document because, once the equipment has been installed, deficiencies in site preparation or the problems caused by these deficiencies are much more difficult to detect and correct. Further, failure to comply with these requirements or to take proper steps to protect equipment against risks identified in this document may cause serious damage to the equipment and to the customer's business.

In addition to the need to comply with the requirements specified, electrical wiring and mechanical systems must also comply with all relevant codes, laws, and regulations.

It is important that a customer or his agent who is fully conversant with the special requirements of electronic equipment prepare the site. The responsibility of ensuring that the site is prepared in compliance with this document remains with the customer.

For information and guidance purposes only, a list is provided, in general terms, of those matters for which the customer is responsible. This list is not intended to be comprehensive, and in no way modifies, alters, or limits the responsibility of the customer for all aspects of adequate site preparation.

NCR staff will be available to answer questions relating to the contents of this document except where:

- A customer has been notified that a full or partial consultant service is available and/or that NCR will be willing to undertake a preliminary or final site survey and
- The customer shall have entered into a formal contract with NCR for provision of the same.

No comment, suggestion, or advice offered or not offered about preparation of the site, nor any inspection of the site, whether before or after preparation, is to be taken as approval of the location of the site and equipment or its preparation. NCR will not be liable in respect to any comment, suggestion, or advice given by its staff or in respect to any failure to give advice.

Finally, only the customer can know the full extent of damage that may be caused to his business by reason of failure of the equipment which is to be installed. For this reason, it is the customer's responsibility to ascertain the extent of any possible damage to his existing or planned business, and to effect full insurance in for all eventualities.

References

- *NCR 7455 Retail Terminal User's Guide*
(B005-0000-1285)
- *NCR 7455 Retail Terminal Service Guide*
(B005-0000-1339)
- *NCR FitClient User's Guide*
(B005-0000-1235)
- *NCR 7455 Retail Terminal Parts Identification Manual*
(B005-0000-1287)

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Revision Record

Issue	Date	Remarks
A	April 01	First issue

Radio Frequency Interference Statements

Federal Communications Commission (FCC)

Information to User

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 interference in which case the user will be required to correct the interference at his own expense.

NCR 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 interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user. The user is cautioned that changes or modifications not expressly approved by NCR may void the user's authority to operate the equipment.

Canadian Department of Communications

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectriques édicté par le ministère des Communications du Canada.

Voluntary Control Council for Interference (VCCI)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Declaration of Conformity

Manufacturer's Name	NCR Corporation
Manufacturer's Address	NCR Corporation Retail Solutions Division 2651 Satellite Boulevard Duluth, GA 30096-5810
Type of Equipment	Information Technology Equipment
Model Number	Class 7455
Electrical Ratings (Input)	100-240 V, 2.0 A, 50-60 Hz

NCR Corporation, 1700 South Patterson Boulevard, Dayton, OH 45459, USA, declares that the equipment specified above conforms to the referenced EU Directives and Harmonized Standards.

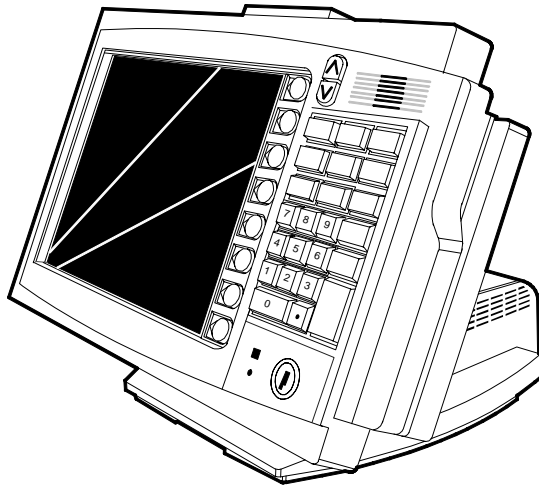
EU Directive	Harmonized Standard(s)
89/336/EEC (EMC)	EN 55022: 1987 (CISPR 22) EN 50082-1, Part 1: 1992 IEC 801-2: 1984 IEC 801-3: 1984 IEC 801-4: 1988
73/23/EEC (Low Voltage)	EN 60 950: 1992 +A1+A2:1993 +A3:1995

NCR Corporation
Retail Solutions Division— Atlanta
2651 Satellite Boulevard
Duluth, GA 30096-5810

European Contact:
International IP Counsel
206 Marylebone Road
London, NW1 6LY, England

Site Preparation

Introduction

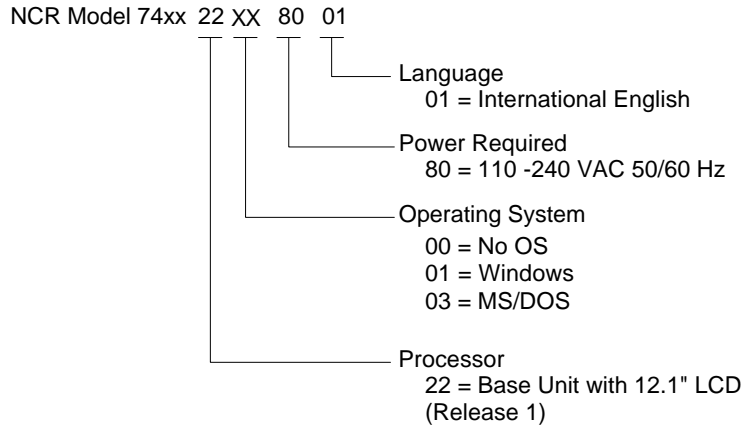


18427

This document provides the information necessary to prepare a site to NCR specifications prior to installing a terminal. The site must be properly prepared before the retail terminal is installed because site preparation deficiencies may be difficult to detect and correct after installation.

The terminal consists of separate pieces that may be combined in a variety of configurations. Certain combinations are mutually exclusive. You must determine the equipment that will actually be installed before proceeding with the site preparation.

Interpreting the Model Number



Related Site Preparation Data

AC Power and Communications Wiring

Title	Order Number
NCR Ethernet Communications Wiring Guide	BST0-2118-82
NCR Terminal AC Power Wiring Guidelines	BST0-2115-53

Peripherals

Title	Order Number
NCR 7158 Thermal Receipt/Impact Printer	B005-0000-1112
NCR 7162 Thermal Receipt Printer Owner's Guide	B005-0000-1067
NCR 7166 Thermal Receipt/Impact Printer	B005-0000-1002
NCR 7194 Thermal Receipt Printer Owner's Guide	B005-0000-1094
NCR 7196 Thermal Receipt Printer	B005-0000-1170
NCR 5972 2x20 Customer Display User's Guide	BD20-1372-A
NCR 5973 2x20 (Asian Character Support) Customer Display User's Guide	BD20-1372-A

How to Order

Information Products are available through several different channels. You need an order form if you are using fax, e-mail, or mail order. Order forms are available to NCR personnel through QuickLook. In QuickLook, click on **Forms & Templates**, then select **Information Products Order Form**.

Web Sites

- <http://info.etail.AtlantaGA.NCR.COM> (NCR only)
- <http://www.info.NCR.COM> (Anyone)

Online Order

- Connect System (NCR only)

Phone Order

- 800-543-2010 (US area)
- 622-3727 (VOICEplus)
- 44-181-242-5350 (International)

Fax Order

- 937-445-6245 (US area)
- 44-181-242-5355 (International)

E-Mail

- Information+Products.Publishing@DaytonOH.NCR.COM (US area)
- Management.Order@unitedkingdom.ncr.com (International)

Mail Order

- NCR Corporation IPP-Dayton
1700 S. Patterson Boulevard
Dayton, OH 45479
USA
- NCR Corporation
915 High Road
North Finchley
London N12 ONH
United Kingdom

Customer Responsibilities

Before the system can be installed, the customer must do or provide the following:

- When required by NCR, provide the NCR Customer Services representative with appropriate drawings that indicate:
 - Location of the equipment
 - Site wiring (power and communications, paths and lengths)
 - Location of other equipment that may generate electrical noise, electromagnetic interference, or heat.
- Make building alterations necessary to meet wiring and other site requirements
- Provide and install all communications cables, wall jacks, special connectors, and associated hardware
- Provide and install necessary power distribution boxes, conduits, grounds, lightning protection devices, and associated hardware
- Make sure all applicable codes, regulations, and laws (including, but not limited to, electrical, building, safety, and health) are met
- Provide and install auxiliary power or other equipment as required
- Provide storage or service areas as required
- Meet all system/unit environmental requirements
- Provide and install floor coverings and environmental systems that limit or control static electricity build-up and discharge

In general, keep the NCR equipment area free from dust, smoke, lint, and other particles. Restrict smoking, eating, and drinking around the equipment. Avoid locating the equipment near other machines that generate ink, carbon, and paper dust particles.

Finally, only the customer can know the full extent of the damage that may be caused to his business by reason of failure of the equipment that is to be installed. For this reason, it is the customer's responsibility to ascertain the extent of any such possible damage to his existing or planned business, and to effect full insurance for all eventualities.

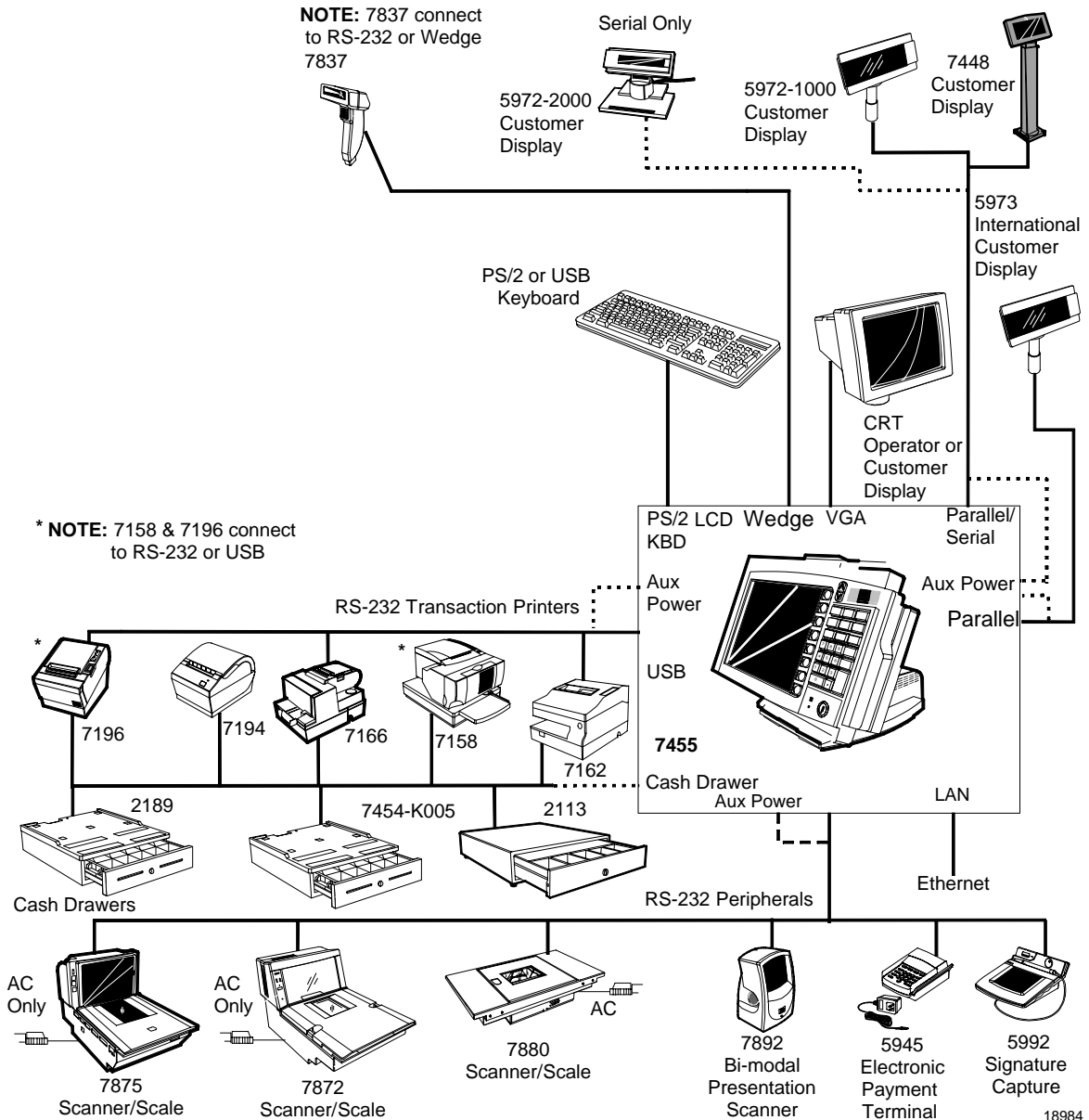
AC Store Wiring Requirements

The customer must provide suitable AC power for the retail terminals, associated equipment, and devices. A dedicated unswitched power line dedicated to the NCR equipment installation is recommended. Refer to the Workstation and Peripherals AC Wiring Guide (BSTO-2115-53) for store AC wiring requirements. The AC outlet must be installed near the retail terminal and easily accessible to the operator.

LAN Communications

The terminal supports Ethernet 10/100 Base local area network (LAN) communication protocol. For Ethernet communications wiring specifications, refer to the *NCR Ethernet Wiring Guide* (BSTO-2118-82).

System Configuration Diagram



Physical Considerations

This section presents the following retail terminal information:

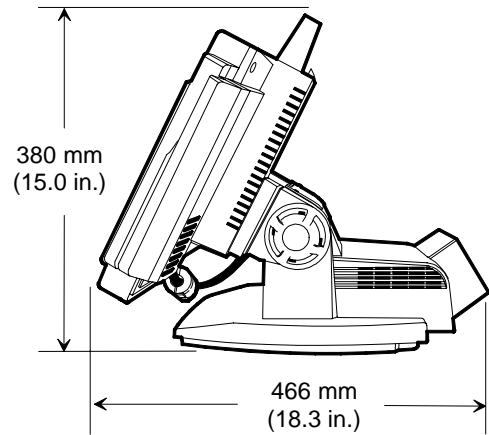
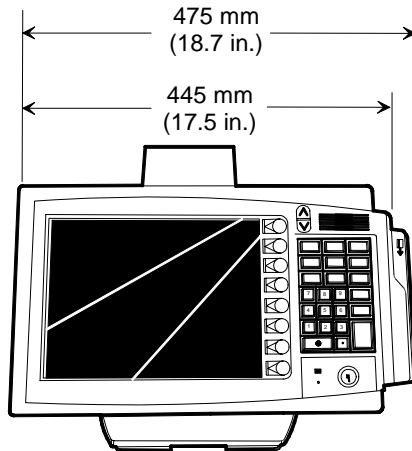
- Operating and service clearance requirements
- Display mounting considerations
- Retail terminal and component dimensions
- Component weights
- Airflow requirements
- Power requirements

Operating and Service Clearance Requirements

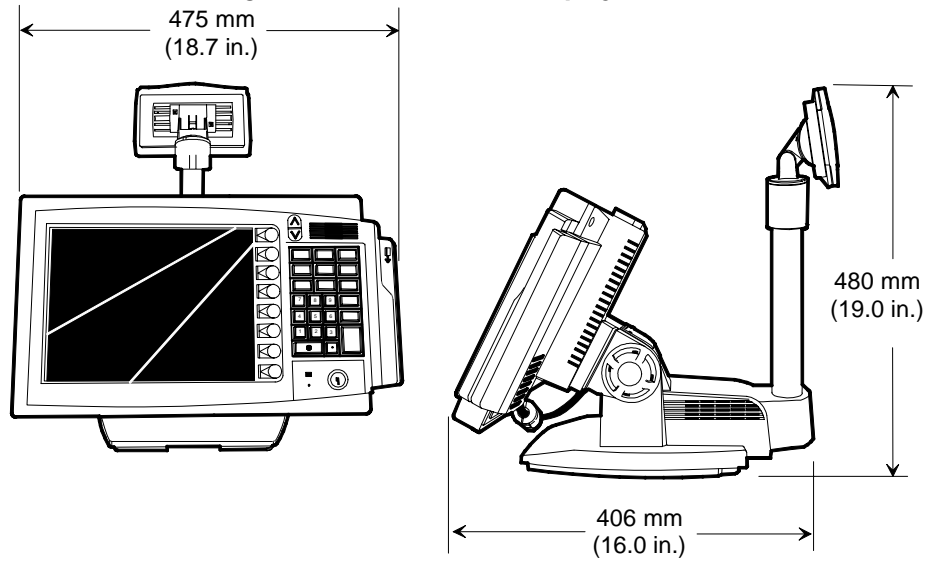
Location	Component	Distance	Reason
Above	7158 Printer	305 mm (12 in.)	Clearance to raise printer cover
	7162 Printer	197 mm (7.75 in.)	Clearance to raise printer cover
	7166 Printer	280 mm (11 in.)	Clearance to raise printer cover
	7194 Printer	228 mm (9 in.)	Clearance to raise printer cover
	7196 Printer	254 mm (10 in.)	Clearance to raise printer cover
	CRT Displays	50 mm (2 in.)	Clearance for CRT tilt
	5972-1000 2 x 20 Display	25 mm (1 in.)	Clearance for display tilt
	All units	153 mm (6 in.)	Service clearance
Left Side	All units	153 mm (6 in.)	Service clearance
Right Side	5972 2 x 20 Display	25 mm (1 in.)	Clearance for display rotation
	All units	202 mm (8 in.)	Service clearance
Front	7162 Printer	127 mm (5 in.)	Clearance to open printer door
	Drawer unit	330 mm (13 in.)	Clearance to open drawer
Behind	7162 Printer	76 mm (4 in.)	Clearance to raise printer cover
	All units	153 mm (6 in.)	Service clearance

Component Dimensions

NCR 7455 with Integrated Customer Display and PCMCIA

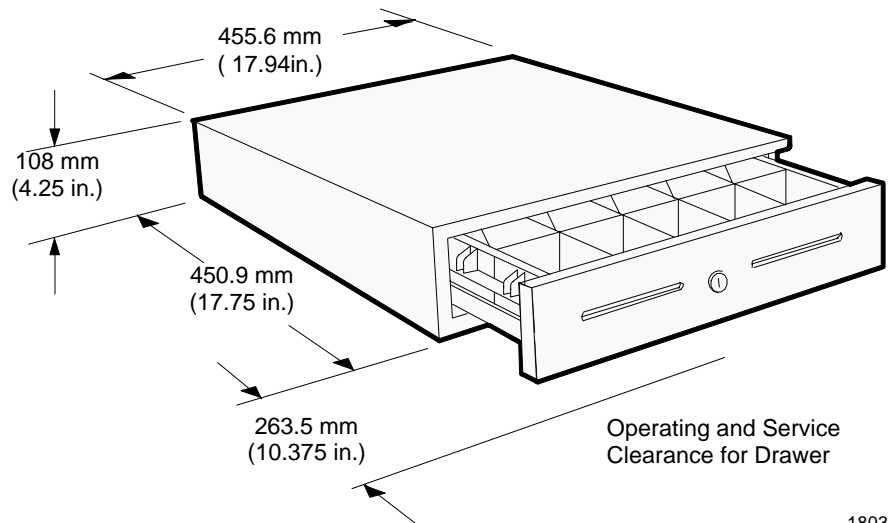


NCR 7455 with Integrated Post Customer Display



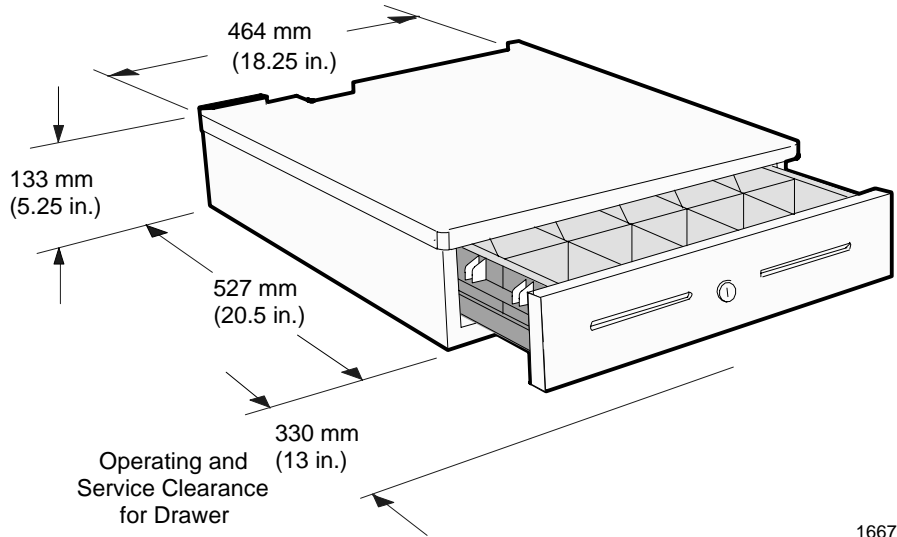
18817

7453-K005 Cash Drawer



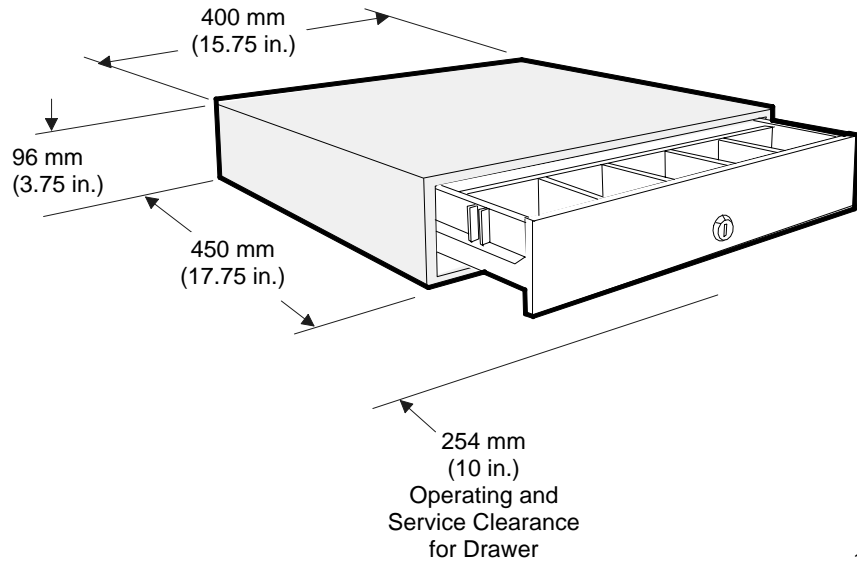
18038

NCR 2189 Cash Drawer



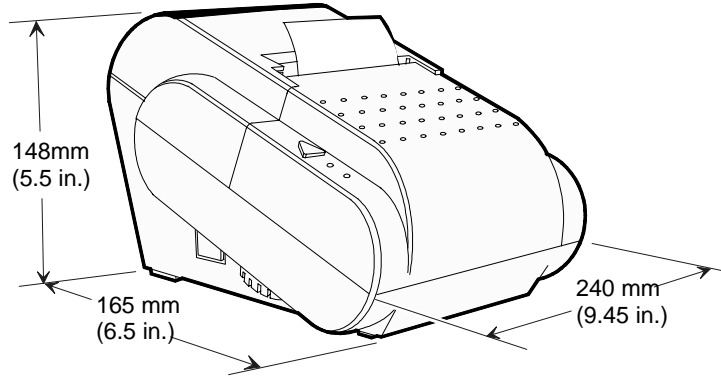
16676

NCR 2113 Cash Drawer



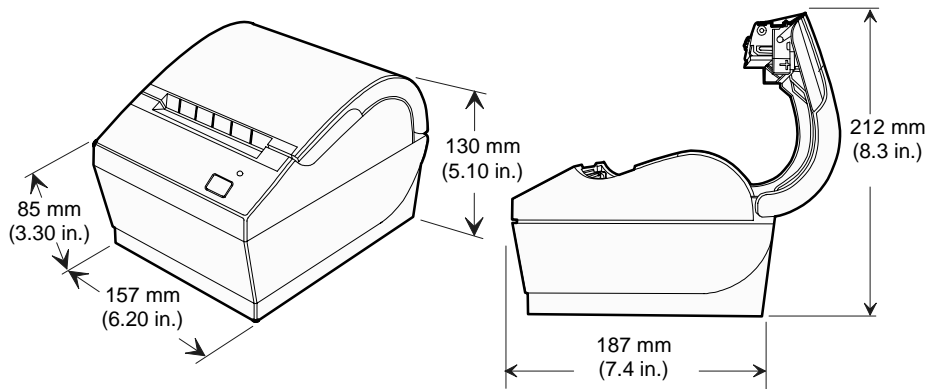
17310

NCR 7162 Receipt Printer



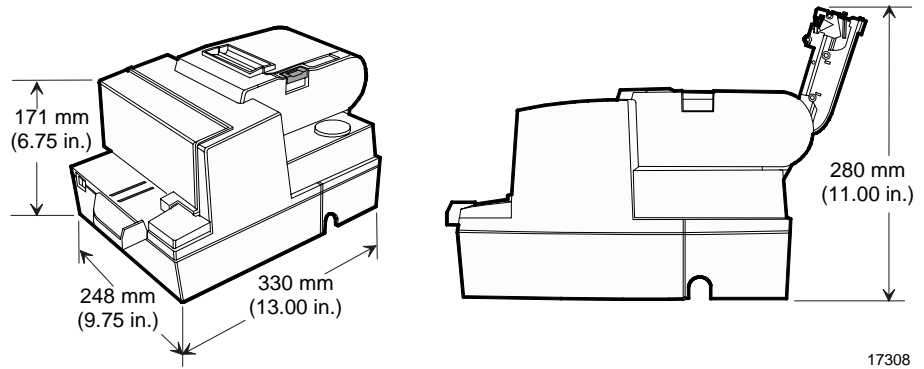
16099

NCR 7194 Thermal Receipt Printer

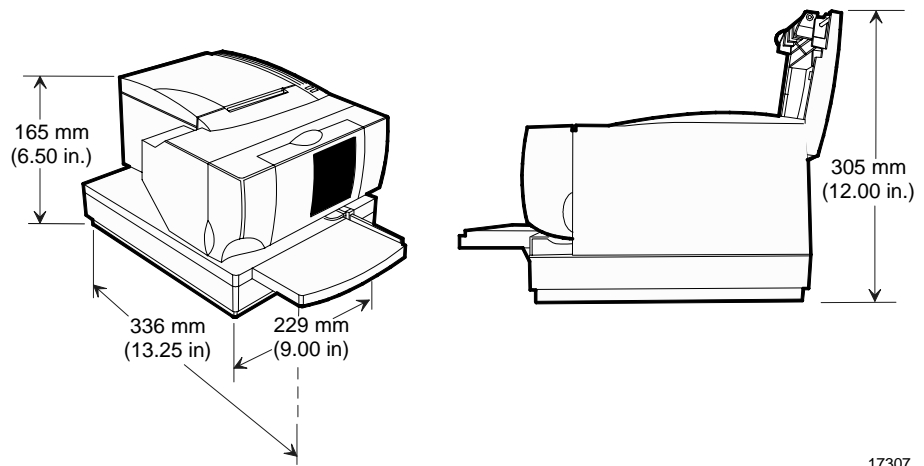


16492

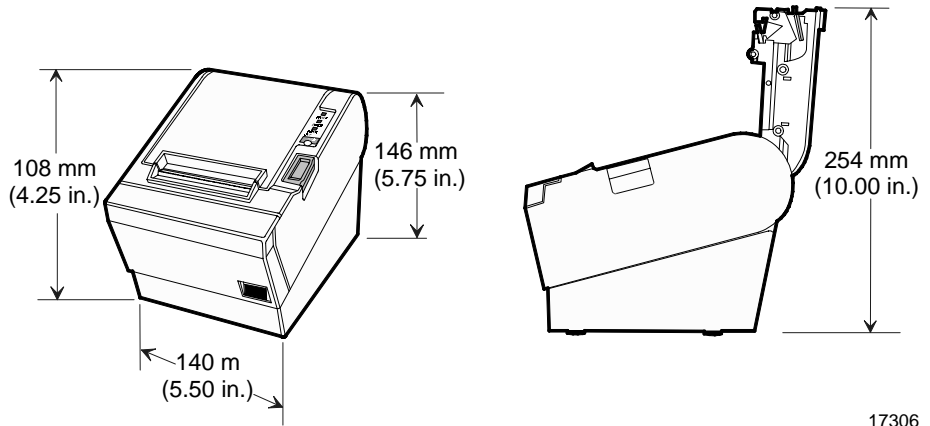
NCR 7166 Thermal Receipt/Impact Printer



NCR 7158 Thermal Receipt/Impact Printer

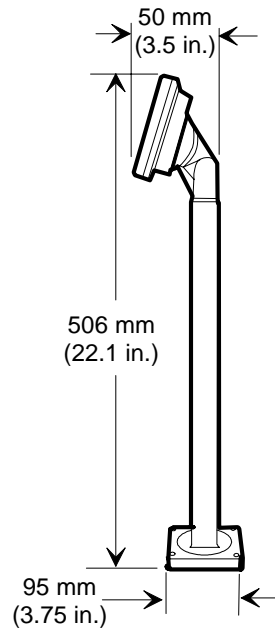
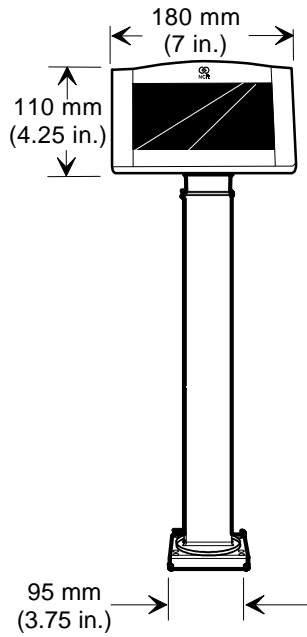
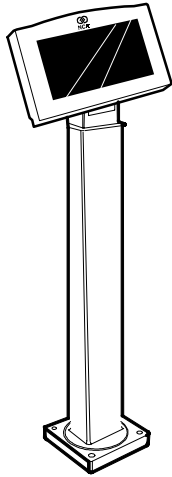


NCR 7196 Thermal Receipt Printer

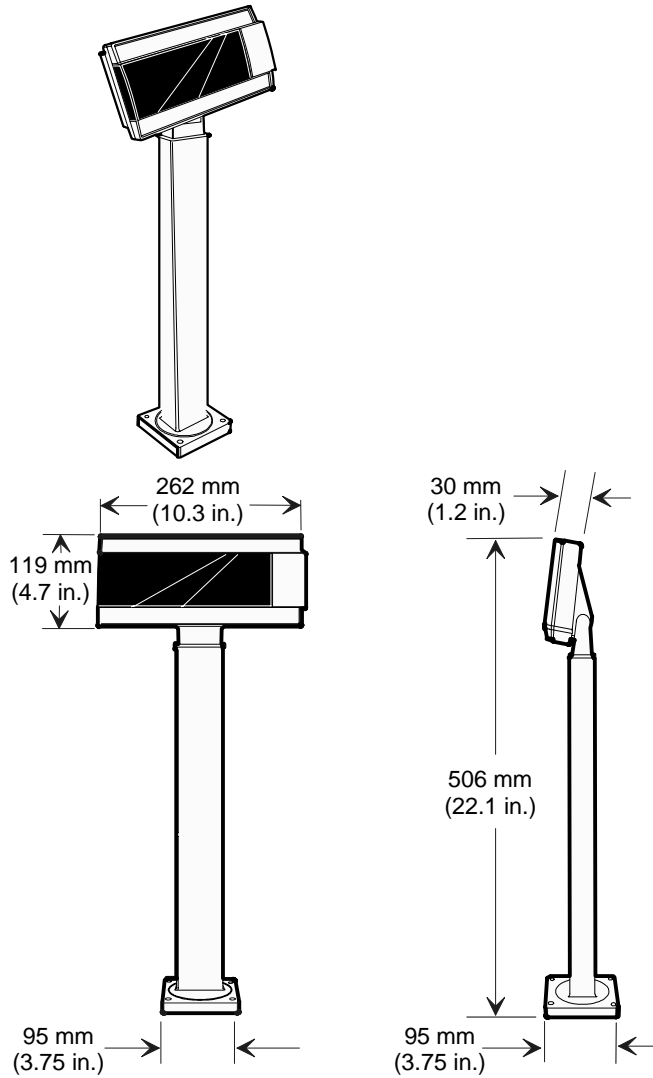


17306

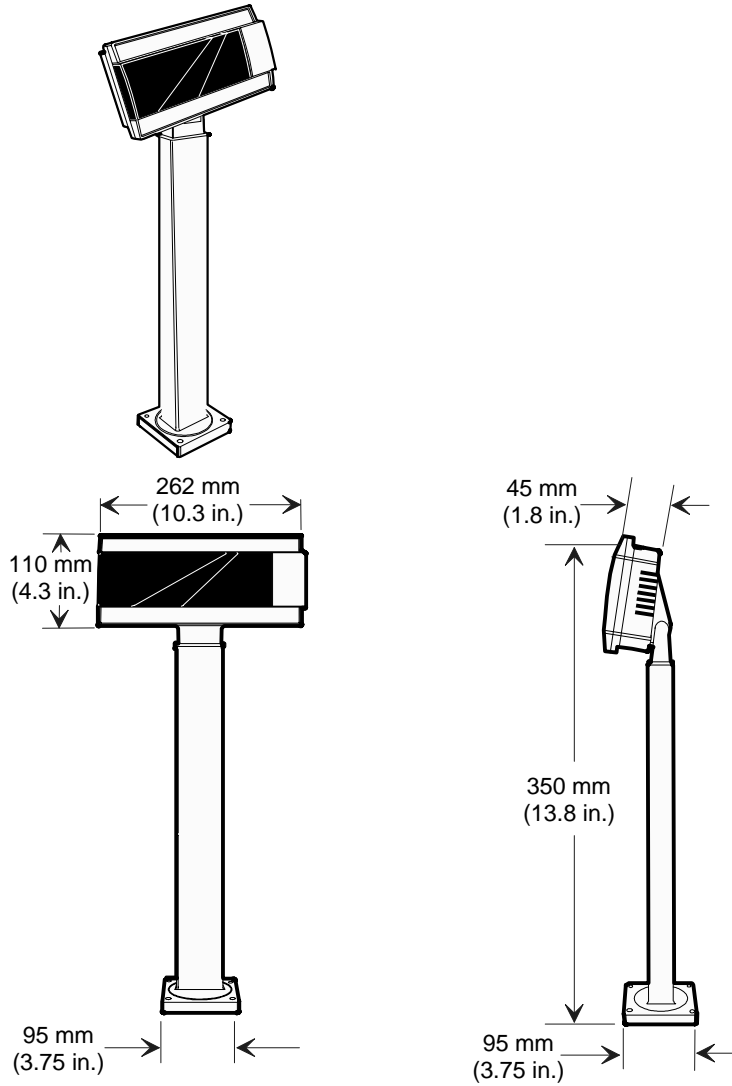
NCR 7455 - 4x20 Remote Post Customer Display



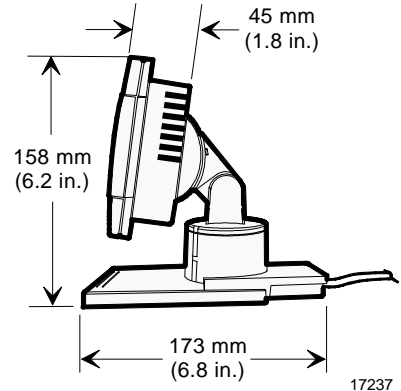
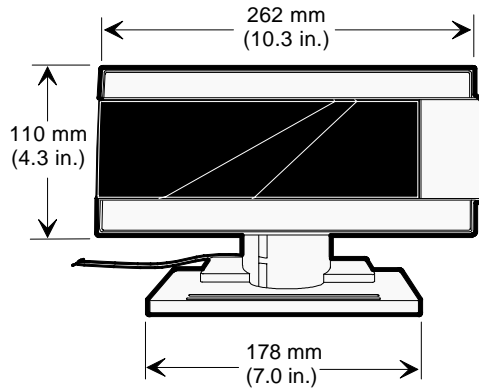
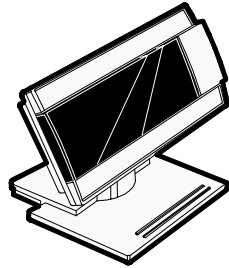
NCR 5972 2x20 Remote Post Customer Display



NCR 5973 International Remote Post Customer Display

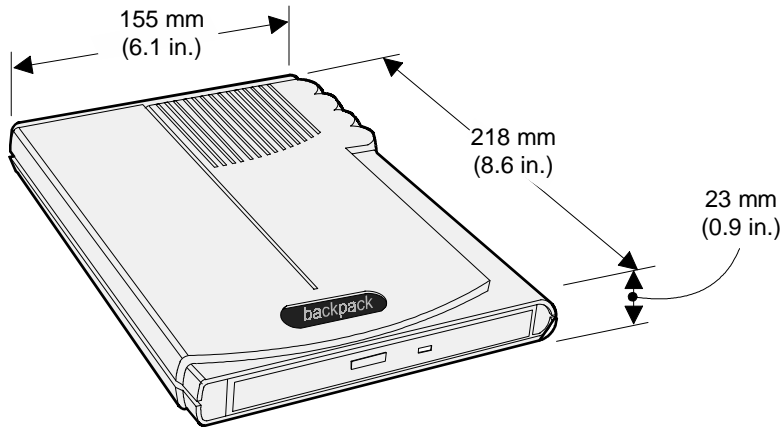


NCR 5972 Remote Table-Top Customer Display



17237

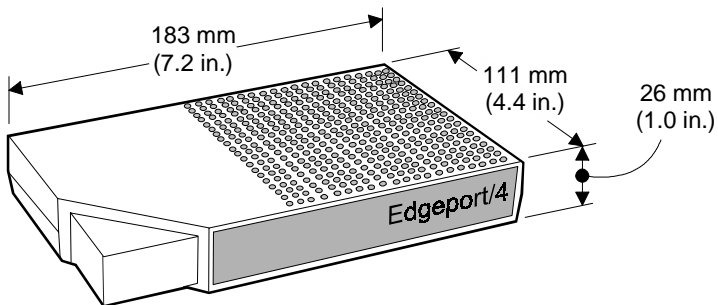
NCR 2336-K007 External CD-ROM Drive



16951

Note: Allow 75 mm (3 in.) clearance in the back of the NCR 2336-K007 External CD-ROM Drive for connector and cable clearance.

NCR 2336-K008 USB RS-232 Port Server



16950

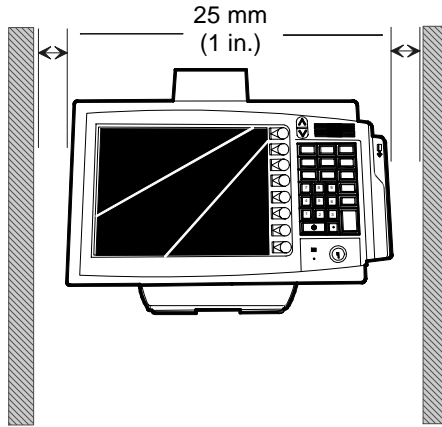
Component Weights

The following table shows the component weights for each integrated component.

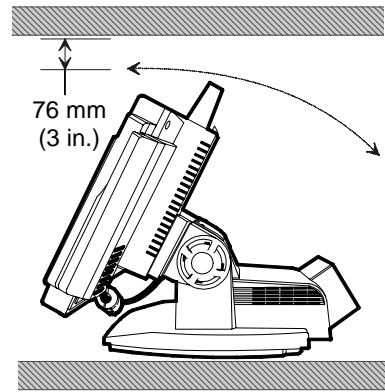
Retail Terminal Components	Weight	
	kg.	lbs.
2189 Cash Drawer	9.5	20.9
7453-K005 Cash Drawer	11.4	25.15
7455 4x20 Remote Customer Display	0.7	1.5
7158 Receipt/Impact Printer	4.8	10.5
7162 Receipt Only Printer	1.7	3.8
7166 Receipt/Impact Printer	5.6	12.3
7194 Thermal Receipt Printer	1.3	2.8
7196 Thermal Receipt Printer	1.8	3.4
2336-K007 External CD-ROM Drive	0.6	1.3
2336-K008 USB RS-232 Port Server	0.3	0.6

Ventilation Clearance

Leave the minimum clearances shown below for proper cooling conditions for the 7455 Class Retail Terminal.



Minimum Horizontal Clearance



Minimum Vertical Clearance

Power Requirements

Core module contain a three-wire, single-phase, selectable 120/240 volt AC, 95 Watt power supply. The supply powers the retail terminal, DynaKey, MSR, some scanner, VFD display, keyboard, USB interface, cash drawer, and PCMCIA cards.

The following tables show operating specifications for the power supply.

Maximum Input Power Specifications

	120 volt	240 volt
Voltage Ranges	90 - 136 VAC	198 - 257 VAC
Frequency	50/60 Hz	50/60 Hz
Current (A)	1.0	0.5
Power (W)	90	90
Power Factor (typical)	0.48	0.38

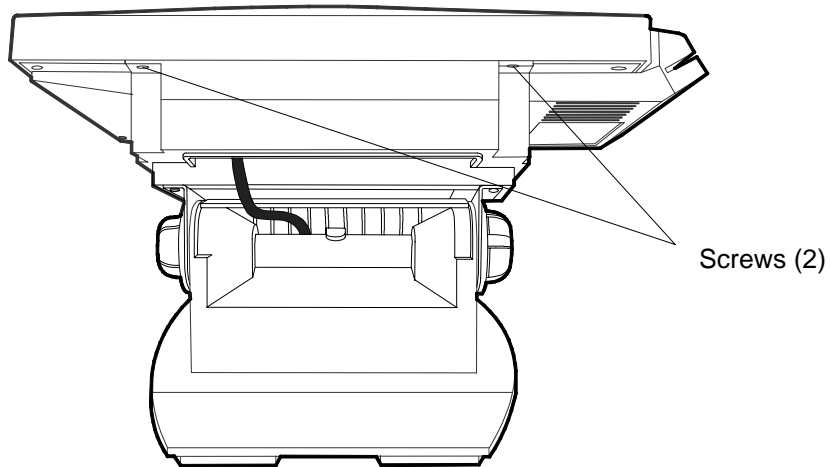
Typical Power Requirements

System	Retail Terminal Condition	Amps	Watts	KVA
120 Volt	7455 Soft OFF	0.39	20.9	0.04
	7455 Idle (Power ON)	0.59	35.3	0.07
	7455 Active with 4x20 display ON	0.66	38.3	0.08
240 Volt	7455 Soft OFF	0.25	18.5	0.05
	7455 Idle (Power ON)	0.38	37.6	0.10
	7455 Active with 4x20 display ON	0.43	40.6	0.11

Cable Routing Considerations

External cables can be routed out the back of the Table-Top Mount.

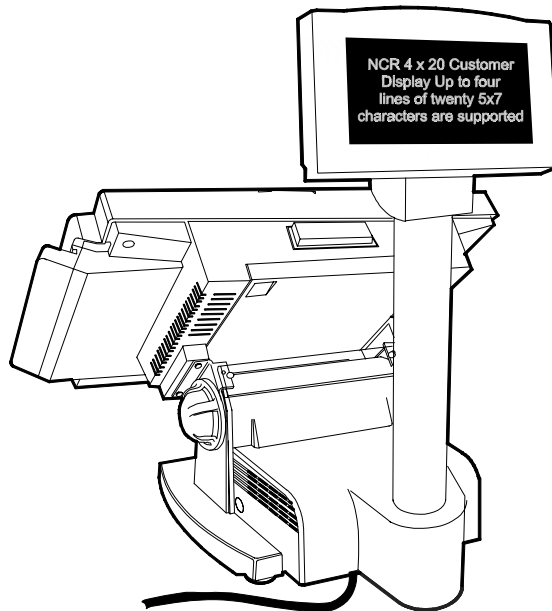
The internal cable connectors on the terminal are located on the underside of the Core Module under the Cable Cover.



Considerations for Enclosed Installations

Thermal Test Points

With the terminal installed in the enclosure, verify that the temperature does not exceed 45° C (115° F) in the operating environment. Test the temperature at the rear access panel covering the CD-ROM and hard drive.



18820

Note: For terminal servicing information refer to *NCR 7455 Retail Terminal Hardware Installation & Service (B005-0000-1285)*.

Service Access

The enclosure must provide access to certain locations for service purposes.

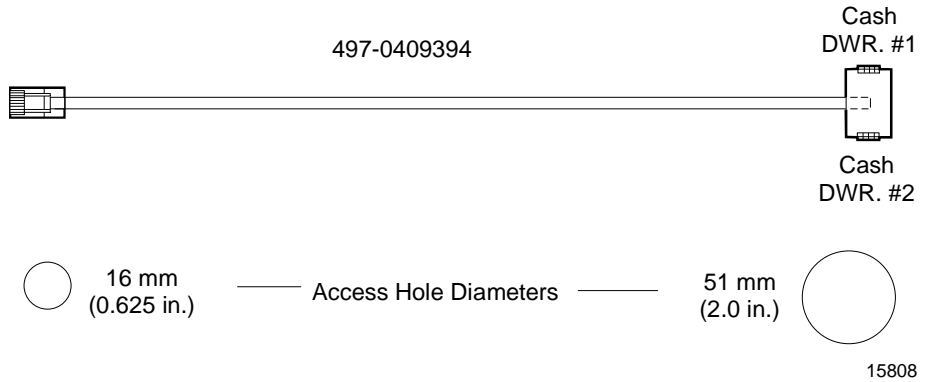
System Cables

Cable Type	Cable Name	NCR Part No.	Corp. ID No	Approximate Cable Lengths
Cash Drawer	Dual Drawer, Y cable	497-0409394	1416-C372-0006	0.6 m/2 ft
Communications	Ethernet, 10/100Base-T (Unshielded)	497-0008623		
	USB	497-0415949	1416-C528-0010	1 m/3 ft
	USB	497-0415950	1416-C528-0040	4 m/13 ft
Displays	Remote Customer Display (Parallel Interface)	497-0418248	1416-C628-1000	4 m/13 ft
	2x20 Customer Display (RS-232 Interface)	497-0415249	1416-C629-1000	4 m/13 ft
	Parallel I/F Cable (adapter cable)	497-0411000	1416-C472-0006	0.6 m/2 ft
Power	U.S. – Straight	006-1009037	1416-C325-0030	3 m/10 ft
	U.S. – Twist-lock	250-0023191	1416-C419-0030	3 m/10 ft
	Intl. – Straight ‘BM’ Power	006-8601010	1416-C323-0030	3 m/10 ft
	Intl.	006-1012224	1416-C411-0030	3 m/10 ft
	SEV – Straight ‘BM’ Power	230-0113955	1416-C408-0030	3 m/10 ft
	UK – Straight ‘BM’ Power	006-8601012	1416-C321-0030	3 m/10 ft
	UK – Rectangular	230-0113956	1416-C409-0030	3 m/10 ft
	Australia – Straight ‘BM’ Power	006-8601019	1416-C322-0030	3 m/10 ft
	Japan – Twist-lock, Straight ‘BM’ Power	008-0218043	1416-C420-0030	3 m/10 ft
Printer Interface	7194/7158 Printer	497-0408349	1416-C359-0007	0.7 m/2 ft.
		497-0407943	1401-C266-0040	4 m/13 ft
		497-0409379	1416-C266-0152	15.2 m/50 ft
	7162 Printer	497-0407427	1416-C337-0010	1 m/3.3 ft
		497-0407429	1416-C337-0040	4 m/13 ft
		497-0407430	1416-C337-0152	15.2 m/50 ft
		497-0409379	1416-C266-0152	15.2 m/50 ft

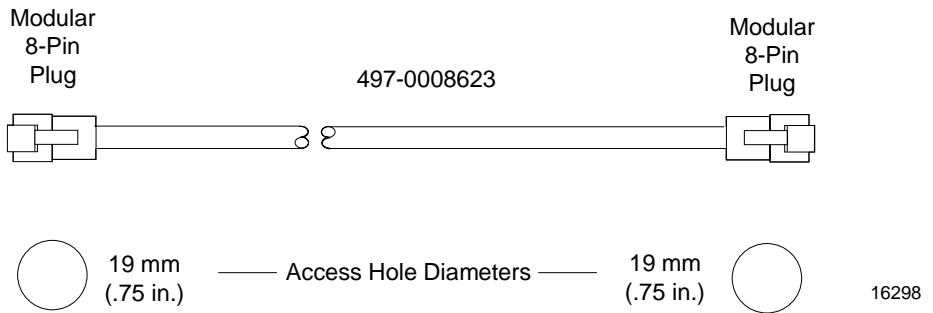
Cable Type	Cable Name	NCR Part No.	Corp. ID No	Approximate Cable Lengths
Printer Extender Drop Cables (7453-K641)	7162/7166/7196 Printer/Workstation	497-0411815	1416-C417-0040	4 m/13 ft
	7194 Printer	497-0411816	1416-C418-0040	4 m/13 ft
Printer Power Supply	7194 Printer	497-0405945	1416-C286-0040	4 m/13 ft

Cable Illustrations

Dual Cash Drawer, Y-cable



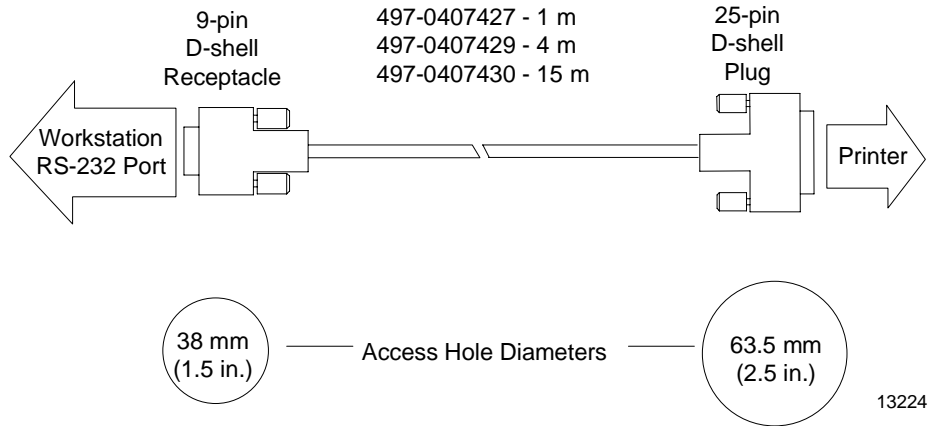
Ethernet, 10/100 Base-T



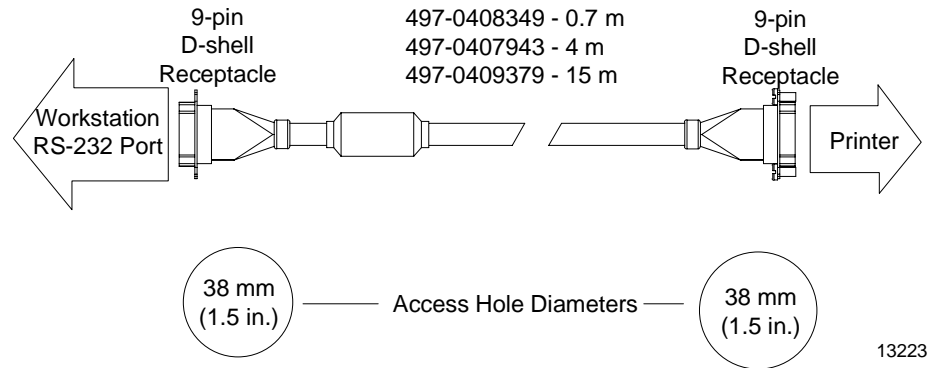
USB, 1- or 4-Meter

Printer Interface Cables (RS-232)

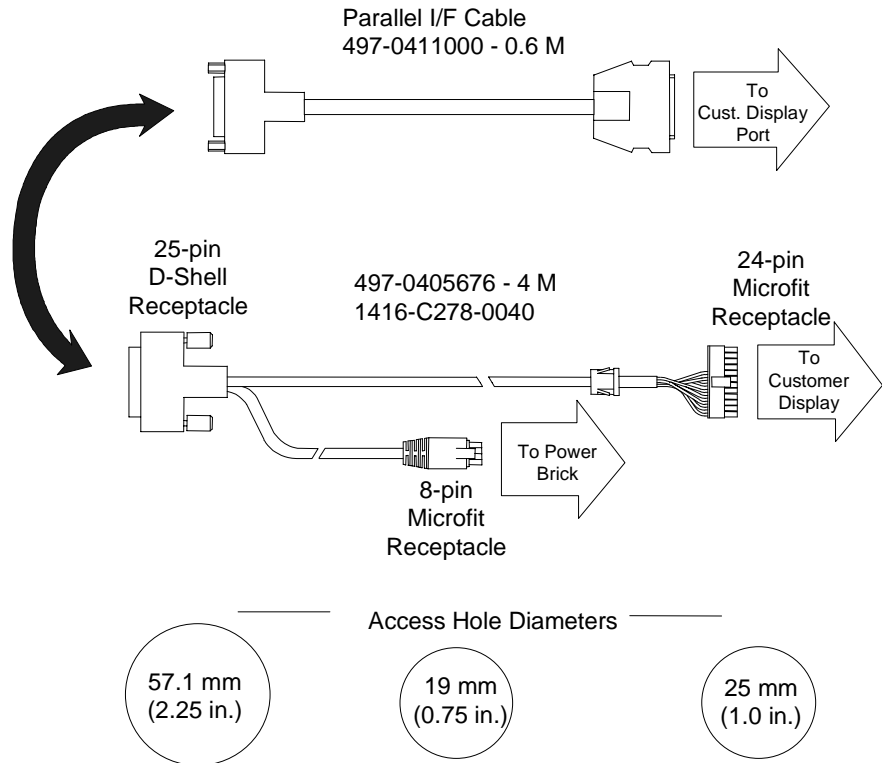
7162/7166/7196



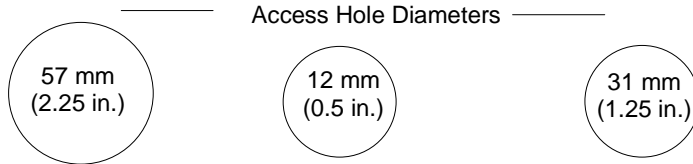
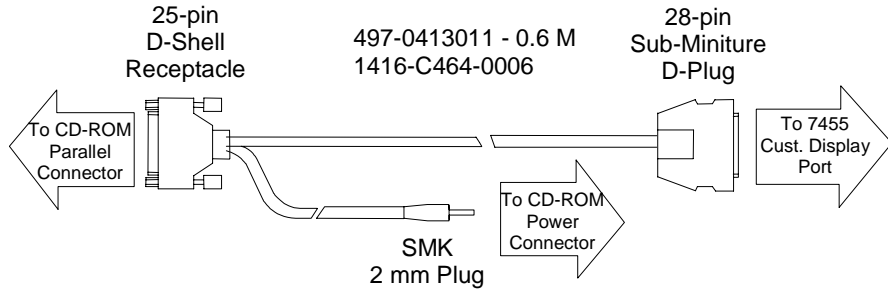
7194/7158



NCR 5972 Remote Customer Display and Adapter Cables

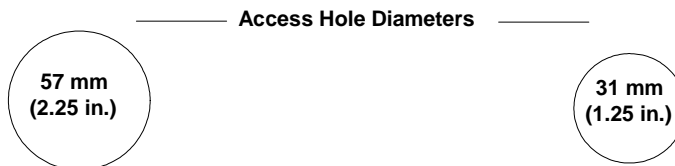
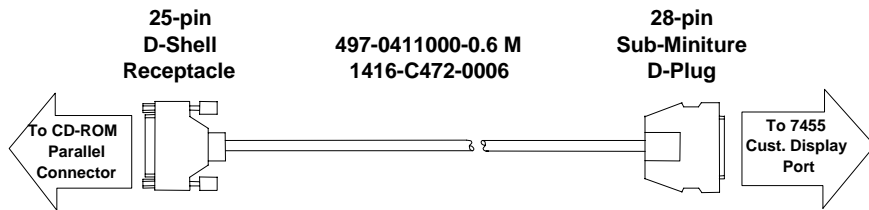


External CD-ROM Cable



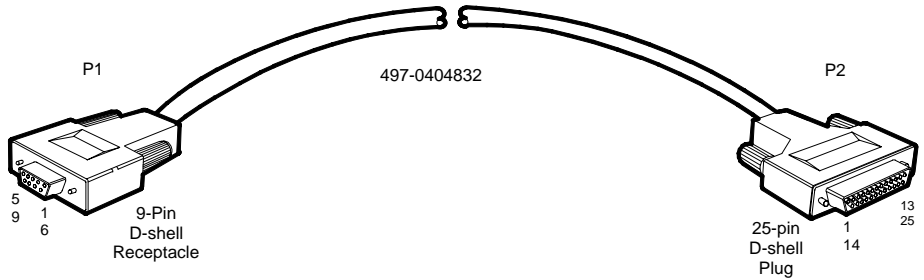
16959

External Parallel Cable



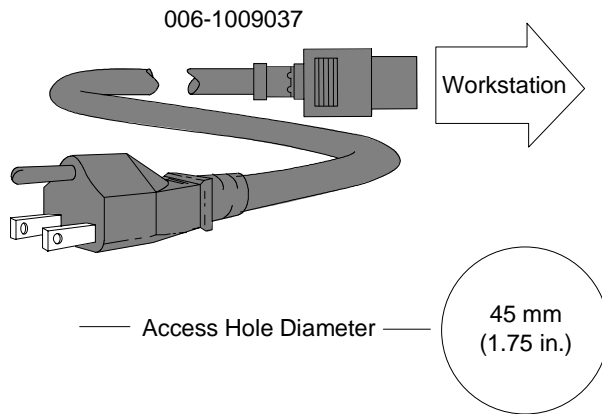
17390

Automatic Change Dispenser Serial Cable



18056

Power, AC



15405

Environmental Requirements

Barometric Pressure

The 7455 Retail Terminal is designed to operate within the following barometric pressure conditions:

- Maximum operating altitude: 3000 m (9843 ft)
- Operating range of pressure: 105 kPa to 69 kPa (15.2 lb/in. to 10.0 lb/in.)

Temperature

The 7455 Retail Terminal is designed to operate over the temperature ranges shown below. Continuous operation must be avoided, however, at or near the temperature extremes, or in locations where temperature changes exceed the temperature restrictions.

Temperature Parameter	Restriction
Operating	5°C to 45°C (41°F to 113°F), dry bulb
Storage	-10°C to 50°C (14°F to 122°F), three months
Shipping	-40°C to 60°C (-40°F to 140°F), one week
Dew Point	26°C (79°F) maximum

Humidity

The 7455 Retail Terminal is designed to operate within the humidity ranges shown below. Continuous operation must be avoided, however, at or near the humidity limits, or in locations where humidity changes exceed the humidity restrictions. In no case should the 7455 Retail Terminal be subjected to condensation.

Humidity Type	Restriction
Relative	10% to 90%
Maximum change rate	10%/60 minutes
Storage	10% to 90% relative humidity, three months
Shipping	5% to 95% relative humidity, one week

Appendix A: Transient Protection

AC Power Line Transient Protection

In the process of power distribution, transient electrical energy (including, but not limited to, lightning strikes, intermittent short circuits, and switching transients) can be introduced onto power lines. Such transient energy can be very damaging to electronic hardware, and can also cause data corruption. Under these circumstances, NCR recommends the use of AC power transient suppressors. Such protection devices are intended to guard against power line transients that can result in hardware damage and various system or program errors.

Improvement of any deficiencies in power quality is a customer responsibility. Malfunction and/or component failure as a result of power quality problems is not covered by the NCR Maintenance Agreement. NCR accepts no liability for any such occurrence or for its consequences.

When power transient suppression is required, the suppressors used should meet the following minimum requirements:

- Dissipate energy to match the appropriate application categories as defined by IEEE Standard 587.
- Be of the voltage limiting (clipping), or tracking filter type. The suppressor must not clamp the voltage to zero, and must self-recover after the passage of the transient. The suppressor may be of the hybrid type construction that makes use of various technologies in order to meet speed and dissipation requirements.
- Upon failure, exhibit a positive indication of its failure such as a blown fuse or tripped breaker.

- Be listed by the accepted safety organization for the country involved (UL, CSA, VDE, ETL, and so on) and the installation must conform to local, state, and national electrical codes and regulations.

Data Line Transient Protection

The nature of the transient phenomenon may extend to the data communication lines connected to this equipment. It is the responsibility of the customer to install and connect a data line transient suppression system to correct or prevent any deficiencies. Such systems must meet the following minimum requirements:

- Be of the voltage limiting type and must self-recover after passage of the transient.
- Insert less than 5 ohms resistance and minimal inductive and capacitive loading at the operating frequency for non-MIRLAN data lines, in order to avoid signal degradation.
- Be installed in accordance with all applicable local, state, and national electrical codes and regulations.

Note: In certain countries, NCR is able to supply both power and data line transient suppressors as well as a comprehensive line of power conditioning equipment. For application data, contact your NCR Customer Services Division Representative.

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