

TH200E

TH200E

High-Speed Thermal Printer

User Guide



Edition July 2008

**WINCOR
NIXDORF**

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Manufacturer's Certification



The device complies with the requirements of the EEC directives 89/336/EEC with regard to "Electromagnetic Compatibility" and tested to safety according to CE requirements.

You will find the CE mark on the device or packaging.

Warranty

Wincor Nixdorf guarantees a limited warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all damages which occur during normal use of the product.

Damages due to:

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surrounding,

will not be covered by the warranty.



All parts of the product which are subject to wear and tear such as the printhead or the cutter are not included in the warranty engagement.

Please order original spare parts from Wincor Nixdorf customer service center.

General Safety Information

Please read the following items carefully before installing & using the printer.

Safety Instructions



Do not touch the printhead, it is hot and sensitive to ESD (Electrostatic discharge)!



Do not touch the cutter and tear bar of the printer.

CAUTION:

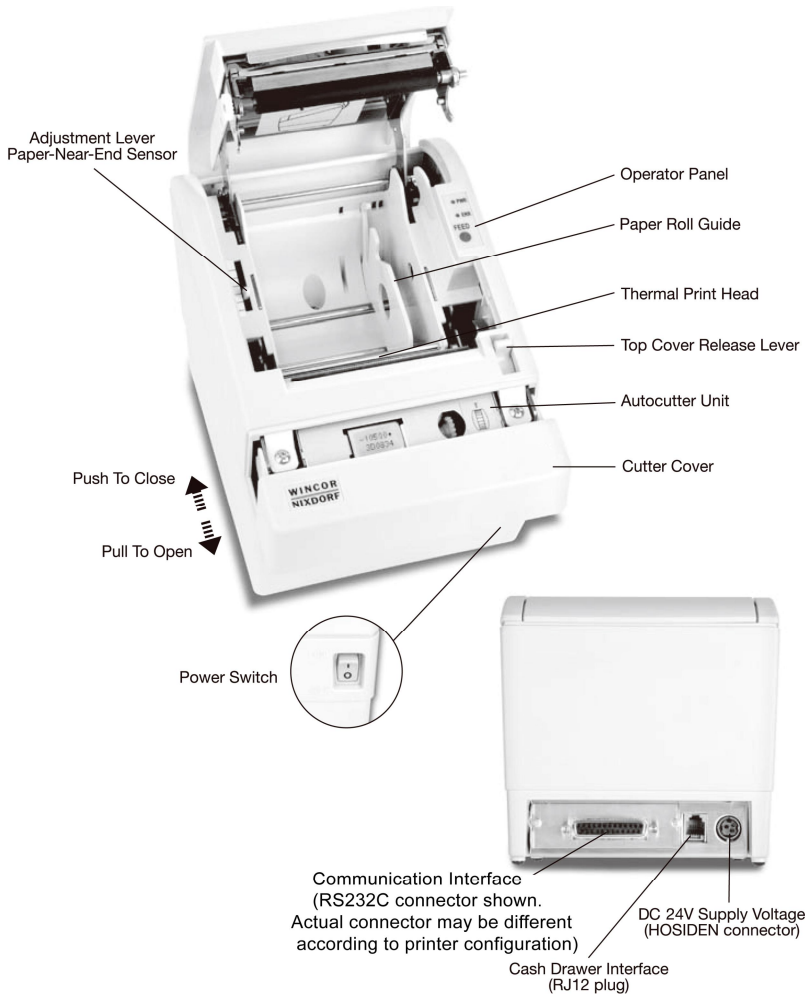
- Install the printer on a flat and stable surface.
- If the printer is brought in from a cold environment, dewfall condensation can occur. In case of such condensation, do not turn on the power until the printer is completely dry.
- Use a properly grounded power supply outlet. To disconnect the printer from the power supply, switch off the printer first then disconnect the power supply plug.
- Always shut down the printer when plugging or unplugging interface connectors to avoid damage to the controller board. Never plug or unplug the interface connectors during thunderstorms.
- Make sure that no objects (e. g. paper clips) or liquids get inside the printer as they might cause electric shocks or short circuits.
- Protect the printer from vibration, dust, moisture, heat and liquids.
- Do not allow printing without paper rolls installed as it may cause damage to the print head.
- Use only certified power supplies and cables.
- The printer should only be transported in its original packaging to protect against damages from knocks and bumps.



The printer should be repaired by authorized personnel only. Repairs made by an unauthorized service provider not only could jeopardize the safety of the user, but could also lead to the cancellation of all warranty and liability agreements.

Overview Of The Printer

The TH200E thermal printer is a high-performance printer that is fast, quiet and reliable, yet easy to use. The printer is compact and will fit anywhere. Paper loading is simple with drop-in paper roll. It also comes with a cutter and cash drawer connections. With these convenient features, the TH200E is an essential supplement to you point-of-sale system!



Features

Print Speed	150mm/s Maximum
Resident Character Sets	PC437 (US), PC850, PC860, PC863, PC865, PC852, PC858, WPC1252, PC866, Katakana, Thai (Standard English/Thai model) (Actual resident character sets may be different in other printer models)
Others Languages	Simplified Chinese, Traditional Chinese, Korean, Japanese, Hong Kong, Vietnamese
Integrated Bar Codes	Code 39, UPC-A, UPC-E, EAN-8, EAN-13, Codabar, Code 128
Printer Resolution	203dpi×180dpi(dots/inch)
Print Width	80mm, 640 Dot Positions
Configuration	Use FEED Button Menu
Flash Memory (Firmware)	1MB/2MB/4MB (model specific)
Flash Memory (Font/Logo)	64KB to 256KB (model specific)
Autocutter	Full Cut or Partial Cut
Interface Options	RS232C, Bi-Directional Parallel, USB 1.1, Ethernet (10 BASE-T)
Cash Drawer	Drive 1 or 2 Cash Drawers
Sensors	Cover Open, Paper-Near-End, Paper-End
Paper Roll Width	82.5mm/80mm/76mm/69.5mm/57.5mm selectable
Max Paper Roll Diameter	83mm
Others	Buzzer, Adjustable Paper-Near-End Sensor, Mark Sensor (certain models only)
Wall Mount	Optional- Wall Mount Kit
Colors	Light Grey, Black

Installing The Printer

Unpacking And Checking The Printer

Unpack the printer and see if the contents of the box matches the packing list. If any damage has occurred in transit, or if there is any discrepancy between the contents and the packing list, please inform your supplier or Wincor Nixdorf's representative.

Packing List: Printer, Communication Cable, Paper Roll, User Guide



TH200E Printer



Communication Cable
(Actual cable depending on interface)



Paper Roll

Keep the original packaging in case you need to transport the printer in the future to protect against knocks and bumps.

Choose A Location

Set up the printer on a flat surface where it will not be exposed to extreme environmental conditions such as vibrations, dust, moisture, heat and strong magnetic fields.

Connecting Cables

The cables must be connected before plugging in the power cable. Turn off the host computer, if necessary.

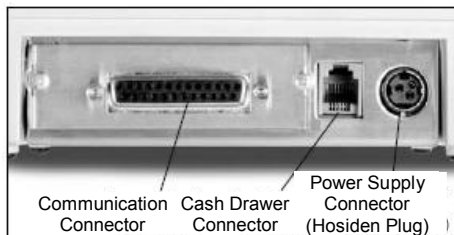
- 1 Plug in the communication cable. Secure the cable by tightening the two screws (for serial interface).
- 2 Plug in the cash drawer cable. The connector allows connection for one or two cash drawers. (use a “Y” cord for two drawers).
- 3 Finally plug in the 24V power cable for the printer.

Note:

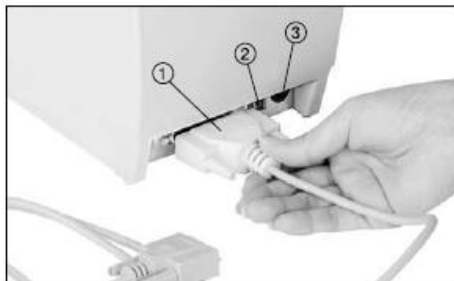
When using an external power adapter, connect the adapter to an appropriate grounding outlet. Do not connect the Hosiden plug when the host computer is turned on, this can lead to an automatic reboot of the system.

If the power supply current can only provide 2A or less, use the configuration menu to select LOW POWER MODE.

Depending on the interface the connector panel may vary from the below illustration.

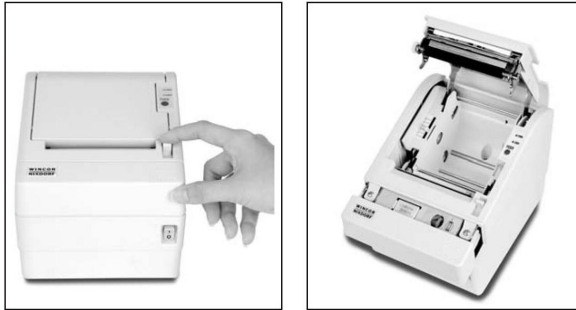


Back View



Loading Receipt Paper

Open the printer top cover by pulling the cover release lever.



Adjusting Paper Roll Guide

The printer can easily accommodate different paper roll widths by adjusting the position of the paper roll guide.

Locate the paper roll guide on the right hand side of the paper cabin. Press at the top of the paper roll guide and take it out. Drop in the paper roll. Snap in the paper roll guide into one of the four guiding locations, depending on the width of the paper roll. Removing the paper roll guide completely allows paper roll width of 82.5mm.

Check that the paper roll can rotate freely.

During configuration, use the menu to adjust the corresponding paper roll width and margins for printing. The default paper roll width is 80.0mm.



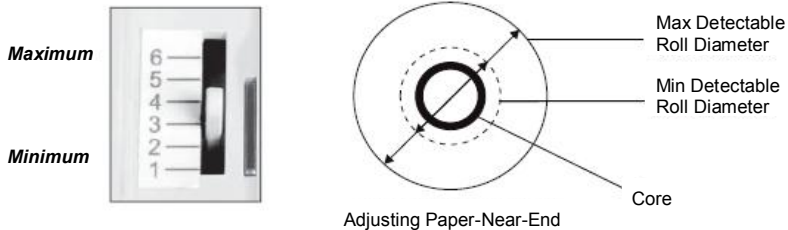
Press down to release
guide from paper cabin



Paper Roll Guide

Adjusting Paper-Near-End Sensor

The printer is equipped with a paper-near-end sensor to alert the user when the paper is running low. The amount of paper remaining can be adjusted by using the adjustment lever. The adjustable paper roll diameter range from 22mm to 34mm approximately.



Loading Paper

Loading Paper



Load the paper roll as shown. Make sure that a few inches of the paper is extended over the cover edge.



Close the printer cover. Tear the excess paper across the tear bar. If necessary, advance the receipt paper by pressing the FEED button.

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

The Operator Control Panel



Power LED

Continuous green light indicates POWER ON.

Error LED

Indicates status/error conditions through different blinking patterns.

FEED Button

Press to feed paper.

Pressing FEED button for a few seconds while switching on the power will enable the printer menu.

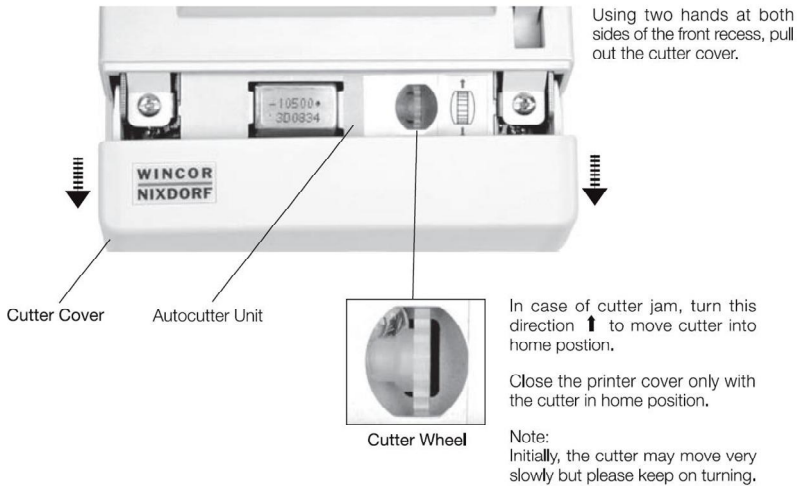
Status/Error LED

Status / Error Condition	ERR LED flashing pattern		Beeper (If enabled)
Paper-Near-End	One Blink		One beep
Paper Out/Paper-End	Two Blinks		Two beeps
Top Cover Open	Three Blinks		Three beeps
Cutter Error	Four Blinks		Four beeps
Print Head Temperature Too High	Continuous Blink		Five beeps
Print Head Voltage/Supply Voltage Abnormal	Continuous ON		Five beeps

The LED will also blink during Self-Test standby mode.

Autocutter

The autocutter unit is conveniently located at the front of the printer. In an unlikely case of cutter jam where you are not be able to open the printer top cover, do not force open the top cover, open the cutter cover instead.



Cutter at home position.



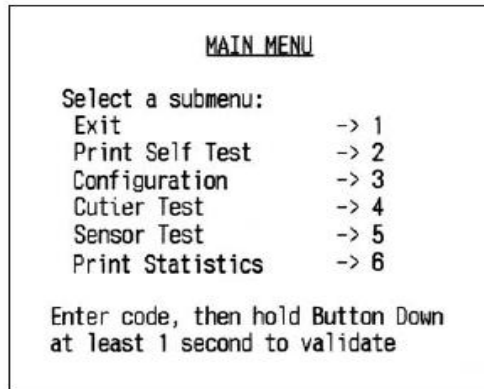
Cutter extending out and not at home position.

The autocutter can be disabled using the configuration menu.

Configuring The Printer

The printer has already been pre-configured. However, you can re-configure the printer using the FEED BUTTON MENU. The MENU can also display current configuration settings and perform self-tests.

To access the menu, switch off the printer. Press the FEED button down for at least 2 seconds while turning on the power switch. The menu page will be printed:



- Print Self Test** – Show important configuration settings for the printer and do a simple printing test
- Configuration** – Change parameter settings for the printer. (see next page for details)
- Cutter Test** – The printer performs 4 halfcuts and a fullcut
- Sensor Test** – ERR LED will indicate ON/OFF according to the state of the sensors
- Print Statistics** – Show the total number of paper cuts and linefeeds performed

To choose a submenu, **PRESS THE FEED BUTTON X-TIMES** according to the selection digit in the main menu, then press and hold the FEED button for at least one second to validate the choice.

Configuration Menu

Below settings are available in the configuration menu. Use this menu to enable/disable certain functions and to configure the printer.

Use the FEED button to navigate to the respective sub-menu.

Configuration Menu Settings	
Communication (Serial)	Baud Rate Parity Data Bits Stop Bits Handshaking Rx Buff Size Data Receive Error Setting
Mechanism and Hardware	Mark Sensor (specific models only) Cutter Buzzer Power Supply
Print Setting	Darkness Settings Paper Roll Width Left Margin Right Margin CR Command Code Page
Paper Sensor Settings	PAPER LOW Alarm Stop Print when PAPER LOW
Set Default Configuration	Set printer to default configurations

To save your new settings, select **Exit with Save** on the configuration main menu. Use Self-Test printout to verify your new settings.

Note: contents of the submenu might change depending on firmware version.

Example Menu

```

TH200E SELF TEST

Printer ID      :20
Boot Firmware  :FV2.130
Main Firmware   :FV4.183

Printer Parameters
Flash Memory Size :1M Bytes
Flash Logos/Fonts :128K Bytes
Paper Roll Width  :80.0mm
Default Code Page :PC437
Language         :English
Left Margin       :7mm
Right Margin      :9mm
Power Supply      :Normal
Print Speed(Max)  :150mm/s
Darkness Setting  :Normal
Cutter           :Enabled
Buzzer           :Disabled
Mark Sensor       :Disabled
Cashdrawer        :Closed

Communication Interface
Interface Type    :RS232
Rx Buffer Size    :4K Bytes
Baud Rate         :19200 bps
Data Bits         :8
Stop Bits         :1
Parity            :None
Handshaking       :DTR/DSR
Command CR        :Disabled
Data Received Error :Print "?"

Resident Fonts
Code Pages        :437,850,852
                  :858,860,863
                  :865,866,1252
                  :Katakana
                  :Thai
International Character
                  :U.S.A.
                  :France

```

Example Print Self Test Page

Current setting

```

BAUD RATES: 19200bps

Select a submenu:
Back To Last Menu  -> 1
9600bps            -> 2
19200bps           -> 3
38400bps           -> 4
57600bps           -> 5
4800bps            -> 6
2400bps            -> 7
1200bps            -> 8
115200bps          -> 9

Enter code, then hold Button Down
at least 1 second to validate

```

Example Configuration Sub-Menu

Duty Cycle Restrictions

The supply current of the printer is directly proportional to the duty cycle (ie, amount of black of printing) and the darkness printing, the printer will adjust the print speed automatically according to the printing duty cycle.

In LOW POWER MODE only "NORMAL" printing darkness is allowed.

To improve the life of the print head, use the lowest acceptable darkness settings.

Care Of The Printer

Remove any paper cuttings or foreign objects from the paper cabin to ensure smooth operation of the paper roll.

Clean your printer at regular intervals with a commercially available cleaner for sensitive surfaces (alcohol solvent is recommended). Never use acidic solvents.

Carefully clean the cutter area to remove paper dust.



Before cleaning make sure that the power is switched off, the power supply plug is disconnected and that no moisture gets into the printer.

Cleaning The Print Head

The printhead should be cleaned, when the printout becomes lighter or there are vertical columns on the printout. Before cleaning, let the printhead cool down first by turning off the power. (The thermal print head is very sensitive to scratches. Clean the head using only non-abrasive cloth & alcohol solvent.)

Cleaning Paper-End/Paper-Near-End Sensors

When any of the sensors behave abnormally, wipe the sensor using a soft cloth and alcohol solvent.

Cleaning The Platen Roller

When there are paper misfeeds or the roller is dirty, please clean the platen roller. Wipe off any stains or dust from the roller.

CAUTION: Never use any sharp object like screw driver as a cleaning tool. This will damage the printer.



Platen Roller



Paper-Near-End Sensor

Appendix

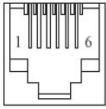
Technical Data

Footprint:	
Height	145mm
Width	146mm
Depth	190mm
Weight (w/o paper)	2.3Kg
Operating Temperature	5°C to 40°C
Power Supply:	
Normal	DC 24V+/-10%, 2.5A
Low Power Mode	DC 24V+/-10%, 2.0A
Power Consumption	Approximately 60W
Paper Roll Width	82.5+/-0.5mm, 80.5+/-0.5mm, 76+/-0.5mm, 69.5+/-0.5mm. 57.5+/-0.5mm
Print Method	Thermal Line Printing
Font Size	9×17/12×24
Max Print Width	80mm
Print Speed	Max 150mm/s
Logo/Font Memory	64KB to 256KB(model specific)
Data Buffer	4KB or 45 Bytes
Interface Options	RS232C/Parallel/USB1.1/Ethernet
Serial Interface	
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity	None, Even, Odd
Handshake	DTR/DSR, XON/XOFF
Cash Drawer	1 x Cash Drawer Connector, supports 1 or 2 Cash Drawers (cash drawer resistance must be > 24Ω)

Recommended Paper Thickness | $\leq 75\mu\text{m}$

Interface Connectors

Drawer Kick Out Connector



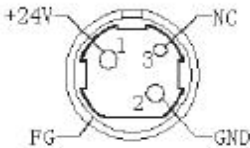
Pin Number

1
2
3
4
5
6

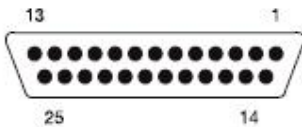
Signal Name

Frame Ground
Drive for cash drawer 1
Drawer open/close signal
+24V DC
Driver for cash drawer 2
Signal Ground

Power Supply Connector



Serial Port Connector



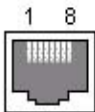
Pin

1
2
3
4
6
7
20

Signal Name

FG
TxD
RxD
RTS
DSR
SG
DTR

Ethernet Port Connector

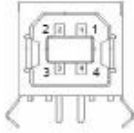


Pin

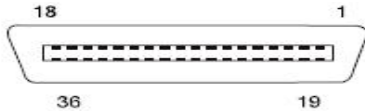
1
2
3
4
5
6
7
8

Signal Name

TX+
TX-
RX+
NC
NC
RX-
NC
NC

USB Connector Type 'B'

Pin	Signal Name
1	+5VDC
2	Data-
3	Data+
4	GND

Parallel Port Connector (IEEE 1284-B)

Pin	Compatibility Mode	Nibble Mode
1	nStrobe	HostClk
2	Data0(LSB)	Data0(LSB)
3	Data1	Data1
4	Data2	Data2
5	Data3	Data3
6	Data4	Data4
7	Data5	Data5
8	Data6	Data6
9	Data7(MSB)	Data7(MSB)
10	nAck	PtrClk
11	Busy	PtrBusy/Data3,7
12	PErrror	AckDataReq/Data2,6
13	Select	Xflag/Data1,5
14	nAutoFd	HOSTBUSY
15	NC	ND
16	GND	GND
17	FG	FG
18	Logic-H	Logic-H
19-30	GND	GND
31	nInit	nInit
32	nFault	nDataAvail/Data0,4
33	GND	ND
34	DK_STATUS	ND
35	+5V	ND
36	nSelectIn	1284-Active

Control Sequences

The control sequences of the printer controller are based on the ECS/POS™ standard. For details, please refer to the programming manual.

Code	Function
HT	Horizontal tab
LF	Print and line feed
FF	Print and return to standard mode (in page mode)
CR	Print and carriage return
CAN	Cancel print data in page mode
DLE EOT	Real-time status transmission
DLE ENQ	Real-time request to printer
DLE DC4	Generate pulse at real-time
ESC FF	Print data in page mode
ESC SP	Set right-side character spacing
ESC !	Select print mode(s)
ESC \$	Set absolute print position
ESC %	Select/cancel user-defined character set
ESC &	Define user-defined characters
ESC*	Select bit-image mode
ESC-n	Turn underline mode on/off
ESC 2	Select default line spacing
ESC 3	Set line spacing
ESC =	Select peripheral device
ESC ?	Cancel user-defined characters
ESC @	Initialize printer
ESC D	Set horizontal tab positions
ESC E	Turn emphasized mode on/off
ESC G	Turn double-strike mode on/off
ESC J	Print and feed paper
ESC L	Select page mode

ESC M	Select character font
ESC R	Select an international character set
ESC S	Select standard mode
ESC T	Select print direction in page mode
ESCV	Turn 90° clockwise rotation mode on/off
ESC W	Set printing area in page mode
ESC \	Set relative print position
ESC a	Select justification
ESCc3	Select paper sensor(s) to output paper-end signals
ESCc4	Select paper sensor(s) to stop printing
ESCc5	Enable/disable panel buttons
ESC d	Print and feed n lines
ESC p	General pulse
ESC t	Select character code table
ESC {	Turn upside-down printing mode on/off
FS g 1	Write to NV user memory
FS g 2	Read from NV user memory
FS p	Print NV bit image
FS q	Define NV bit image
Gs FF	Feed next mark to the printing position
GS !	Select character size
GS\$	Set absolute vertical print position in page mode
GS (A	Execute test print
GS*	Define downloaded bit image
GS/	Print downloaded bit image
GS:	Start/end macro definition
GS B	Turn white/black reverse printing mode on/off
GS H	Select printing position of HRI characters
GS I	Transmit printer ID
GS L	Set left margin

GS P	Set horizontal and vertical motion units
GSV	Select cut mode and cut paper
GSW	Set printing area width
GS\	Set relative vertical print position in page mode
GS ^	Execute macro
GS a	Enable/disable Automatic Status Back (ASB)
GS f	Select font for HRI characters
GS h	Set bar code height
GS k	Print bar code
GS r	Transmit status
GS v 0	Print raster bit image
G8 w	Set par code width
FS !	Set print mode(s) for Kanji characters
FS &	Select Kanji character mode
Fe -	Turn underline mode on/off for Kanji characters
FS .	Cancel Kanji character mode
FS 2	Define user-defined Kanji characters
FS C	Select Kanji character code system
FS S	Set Kanji character spacing
FS W	Turn quadruple-size mode on/off for Kanji characters