NCT-800

Auto Non-Contact Tonometer

User's Guide

RODENSTOCK

Table of Contents

Table of Figures

Introduction

Congratulations on your purchase of the NCT-800 Auto Non-Contact Tonometer.

The NCT-800 is an auto-aligning non-contact tonometer used to measure the intraocular pressure of the eye by delivering a very soft air puff to the eye.

This User's Guide is designed as a training and reference manual. We recommend you carefully read and follow the steps in this guide to ensure optimum performance from your new instrument.

Please retain this guide for future reference and to share with other users. Additional copies can be obtained from your authorized Rodenstock dealer.

Contraindications

Use of the NCT-800 is contraindicated in instances of:

A. Edematous/ulcerated cornea
B. Following keratoplasty
C. Following penetrating trauma.

Warnings & Cautions

Rodenstock is not responsible for the safety and reliability of this instrument when:

- Assembly, disassembly, repair or modification is made by unauthorized dealers or persons.
- Instrument is not used in accordance with this User's Guide.

WARNING: ANY REPAIR OR SERVICE TO THE NCT-800 MUST BE PERFORMED BY EXPERIENCED PERSONNEL OR DEALERS WHICH ARE TRAINED BY RODENSTOCK SO THAT CORRECT OPERATION OF THE NCT-800 IS MAINTAINED.

WARNING: THE AREA AROUND THE NCT-800'S NOSEPIECE MAY CREATE A "PINCH HAZARD." DO NOT PLACE YOUR FINGER INTO THE APERTURE SURROUNDING THE NOSEPIECE.

CAUTION: MAKE SURE THAT THE VOLTAGE APPLIED TO THE UNIT IS THE SAME AS THE VOLTAGE WHICH IS GIVEN ON THE DATA PLATE NEXT TO THE INPUT CORD RECEPTACLE OR DAMAGE TO THE UNIT MAY OCCUR.

CAUTION: THIS INSTRUMENT MUST BE PLUGGED INTO AN OUTLET WITH AN EARTH GROUND WHICH IS CONNECTED TO THE RECEPTACLE OR DAMAGE TO THE UNIT MAY OCCUR. DO NOT DISABLE OR REMOVE THE GROUND PIN.

CAUTION: THIS INSTRUMENT IS NOT SUITABLE FOR USE IN THE PRESENCE OF FLAMMABLE ANESTHETIC MIXTURES, SUCH AS OXYGEN OR NITROUS OXIDE.

CAUTION: DO NOT USE SOLVENTS OR STRONG CLEANING SOLUTIONS ON ANY PART OF THIS INSTRUMENT OR DAMAGE TO THE UNIT MAY OCCUR.

CAUTION: USE OF ALCOHOL ON THE LIQUID CRYSTAL DISPLAY (LCD) MAY CAUSE DAMAGE TO THE DISPLAY.

CAUTION: PARTS AND ACCESSORIES USED MUST MEET THE REQUIREMENTS OF THE APPLICABLE IEC601 SERIES. SAFETY STANDARDS AND/OR THE SYSTEM CONFIGURATION MUST MEET THE REQUIREMENTS OF THE IEC601-1-1 ELECTRICAL SYSTEMS STANDARD.

Instrument Setup

Great care has been taken to deliver your new NCT-800 Auto Non-Contact Tonometer safely to you. The container and packaging was specially designed to transport this unit. Please retain the packaging for future use if transportation is required.

Unpacking Instructions

Please unpackage the instrument in the following manner: (Refer to Figures 1 thru 3)

The instrument is packaged in a shipping container to protect the instrument from damage during shipment. Please read the User's Guide before operating the unit. A quick Reference Card is provided for your convenience and reference during operation of the unit.

1. Remove the Top Foam from the Shipping Container.
2. Remove the accessories from the Upper Foam.
   - Power cord
   - Dust cover
   - Spare printer paper (2 rolls)
   - Cleaning cloth
   - Phillips-head screwdriver
   - Quick Reference Card
3. Remove the Upper Foam which secures the unit. Lift the unit out of the Inner Box using the handle slots provided on the Cradle.
4. Unfold the Cradle and remove the plastic bag over the unit. Set the unit on a secure table.
5. Put the shipping materials in a safe place of storage so that if transportation is required in the future, the packaging will be available.

Figure 1, Shipping Container

Figure 2, Instrument Components

Figure 3, NCT-800 with Cradle

Instrument Setup (Continued)

Disengage Travel Lock

Disengage the Travel Lock located behind the Printer Door as follows:

- Open the Printer Door by pushing on the door above the printer paper slot. Refer to Figure 4.
- Remove the foam insert that secures the printer paper during shipment and store it with the packaging materials.
- Insert the Screwdriver (Phillips-head) into the Travel Lock hole and locate the travel lock screw. Refer to Figure 5.
- Turn the screw six full turns counterclockwise (the screw remains inside the Travel Lock hole).
- Remove the Screwdriver, align the printer paper through the paper slot and close the Printer Door.

Note: If at any time the unit is transported, the Travel Lock must be engaged prior to packaging the unit into the shipping box.

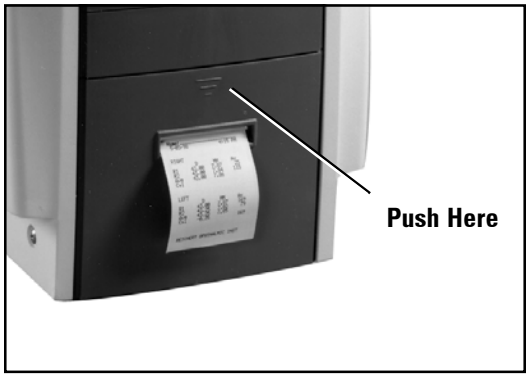


Figure 4, Opening Printer Door

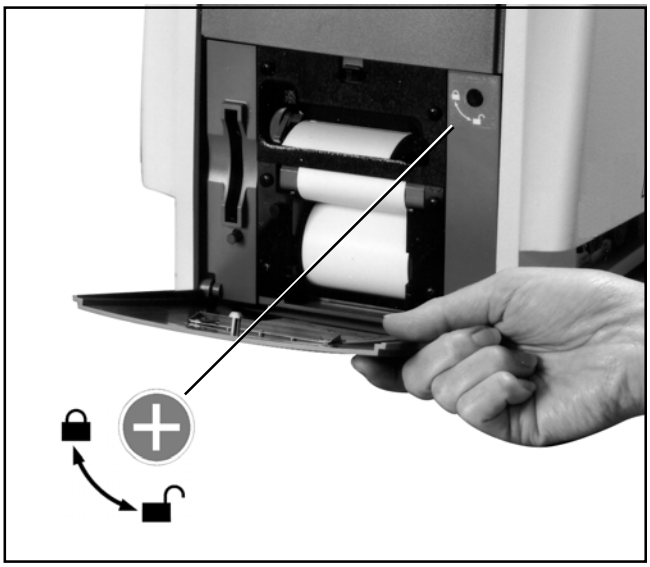


Figure 5, Travel Lock

Application of Input Power

CAUTION: MAKE SURE THAT THE VOLTAGE APPLIED TO THE UNIT IS THE SAME AS THE VOLTAGE WHICH IS GIVEN ON THE DATA PLATE NEXT TO THE INPUT CORD RECEPTACLE OR DAMAGE TO THE UNIT MAY OCCUR.

CAUTION: FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE, ANY REPLACEMENT OF DAMAGED FUSES MUST BE IN ACCORDANCE WITH THE FOLLOWING TYPE AND RATING.

(220/240 Volts use "T 0.315 AL 250V" fuses)

6. After the unit is secure, plug in the instrument using the Power Cord which was contained in the Accessory Tray.
7. Press any Control Button below the operators screen as indicated on the instrument.
8. Read and fully understand the User's Guide and the Quick Reference Card before operating this instrument.

WARNING: DO NOT REMOVE THE OUTSIDE COVERS OF THE UNIT OR ATTEMPT TO REPAIR ANY INTERNAL PARTS. REPAIR AND SERVICE OF THE UNIT MUST BE PERFORMED BY EXPERIENCED PERSONNEL OR DEALERS WHICH ARE TRAINED BY RODENSTOCK.

Instrument Setup (Continued)

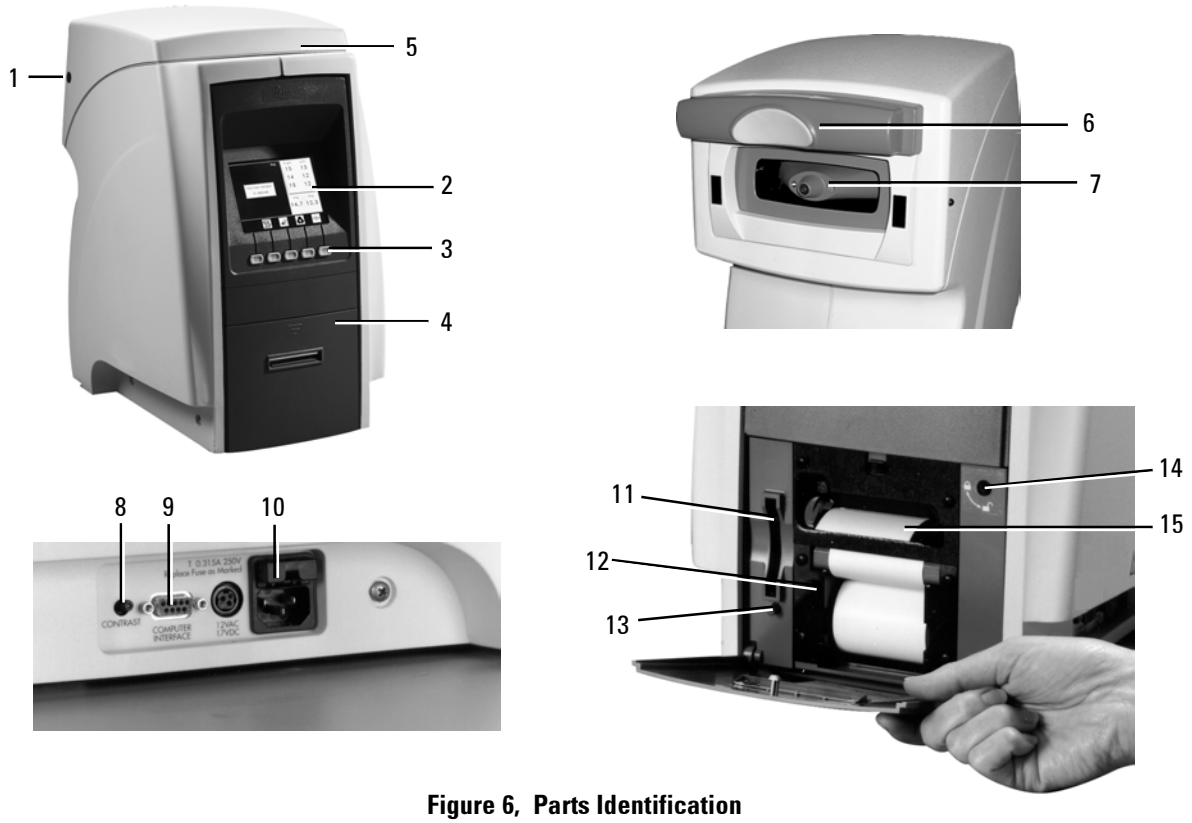


Figure 6, Parts Identification

Parts Identification

1. **Canthus Alignment Marks** (right and left side):
   Alignment mark that sets reference for vertical height of eye.
2. **Operator Display**:
   LCD which shows measurement data.
3. **Control Buttons**:
   Buttons used to select the Icons displayed on the Operator Display.
4. **Printer Door**:
   Printer door (push to open) to access travel lock and printer paper.
5. **Headcover**:
   Outside top cover that provides access to the optical head assembly.
6. **Forehead Rest**:
   Alignment mechanism that moves right / left for correct patient positioning.
7. **Nosepiece Objective:**
   Airtube where "air puff" originates.
8. **Contrast Control**:
   Control knob that lightens / darkens the Operator Display.
9. **RS-232C Port**:
   Communication port that transfers printer data.
10. **Main Power & Fuse Holder**:
    Connection point for input power and fuses.
    Press tab up to remove fuse holder.
11. **PC Card Slot**:
    Slot for installing a PC Card that contains upgrades / new options. After installation, the PC Card must remain installed.
12. **Printer Paper Advance Button**:
    Button for advancing the printer paper and setting the printer off-line / on-line.
13. **Reset Button**:
    A push-button switch that when depressed performs a system reset (or hardware reboot) of the instrument.
14. **Travel Lock**:
    Locking mechanism that secures the internal parts of the unit during shipment.
15. **Printer**:
    Thermal printer supplied with the unit.

Instrument Setup (Continued)

Icon Definition

The NCT-800 incorporates a user-friendly icon/menu-based operating system that will increase the speed of measurements, training and use. Below are the Icons which are used during the operation of this instrument.

Icon	Icon Description	
	**MODE**	Accesses secondary level menus such as setup and help.
	**MEASURE**	Initiates the measurement sequence.
	**DEMO**	Allows patient to feel a soft demonstration air puff.
	**CLEAR DATA**	Clears both right and left data on the Operator Display and in memory.
	**PRINT**	Sends the data to the printer.
	**SETUP**	Provides access to the default settings so that changes can be made.
	**HELP**	Displays help instructions.
	**SERVICE**	Displays service information.
	**TRAVEL LOCK**	Positions the instrument to the “park” position so that the travel lock can be engaged.
	**LEFT EYE**	Selects left eye for measurement.
	**RIGHT EYE**	Selects right eye for measurement.
	**MEASURING**	Provides visual indication of alignment during the measurement process.

Instrument Setup (Continued)

Default Settings

The NCT-800 has default settings that are set at the factory. A summary of these settings are given on the next page. A detailed definition / explanation of each setting is given on pages 11-14.

The following steps provide the details regarding how to customize the default settings.

How To Customize:

1. Press the button below the **MODE** icon.
2. Press the button below the **SETUP** icon.
3. Press the button below the **UP/DOWN ARROWS** icon to choose the appropriate **setup category** (e.g., Printout Setup).
4. Press the button below the **SELECT** icon to display the **parameters** and **settings** of the **setup categories**.
5. Press the button below the **UP/DOWN ARROWS** icon to move the cursor box to the desired **parameter**.
6. Press the button below the **SELECT** icon to activate the highlighted **parameter**.
7. Press the button below the appropriate **RIGHT/LEFT ARROWS** icon to move the cursor box to the desired **setting** for the **parameter**.
8. Press the button below the **SELECT** icon to activate the highlighted **setting**.
9. Press the button below the **RETURN** icon to step back thru the previous menus until the Main Menu is shown.

Icon	Icon Description	
	**MODE**	Accesses **setup categories** such as setup and help.
	**SETUP**	Provides access to the **parameters** so that the default **settings** can be modified.
	**RETURN**	Returns to preceding screen.
	**RIGHT ARROW**	Used in the setup menus to move right horizontally.
	**LEFT ARROW**	Used in the setup menus to move left horizontally.
	**UP ARROW**	Used in the setup menus to move up vertically.
	**DOWN ARROW**	Used in the setup menus to move down vertically.
	**SELECT**	Used in the setup menus to activate the new **parameter** or **setting**.

Instrument Setup (Continued)

Default Settings (Continued)

This instrument is sent from the factory with measurement, printer, communication, and miscellaneous parameters set to default settings. These settings can be changed to suit the needs of the individual operator / clinician. A summary of these settings are given below with the default selections shown in **bold** type. To customize these settings, follow the steps given on page 9, *Instrument Setup*, *Default Settings*.

Customized Options

This instrument has the following default settings:

Tonometer Setup: (page 11)

Readings: Single **Avg (3)**
Pressure: kPa **mmHg**

Printout Setup: (page 12)

Date Format: **MDY**, DMY, YMD
Time Format: **AM/PM**, 24 HR
Date: 04/17/2000
Time: 05:00 PM
Printer: **On**, Off
Practice: Rodenstock

Communications Setup: (page 13)

Baud: 2400, 4800, 9600, **19200**
Parity: **None**, Odd, Even
Data Bits: 7, **8**
Stop Bits: **1**, 1.5, 2
Flow: **None**, Xon/Xoff
Printer: **On**, Off

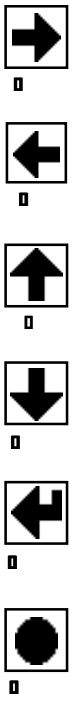
Miscellaneous Setup: (page 14)

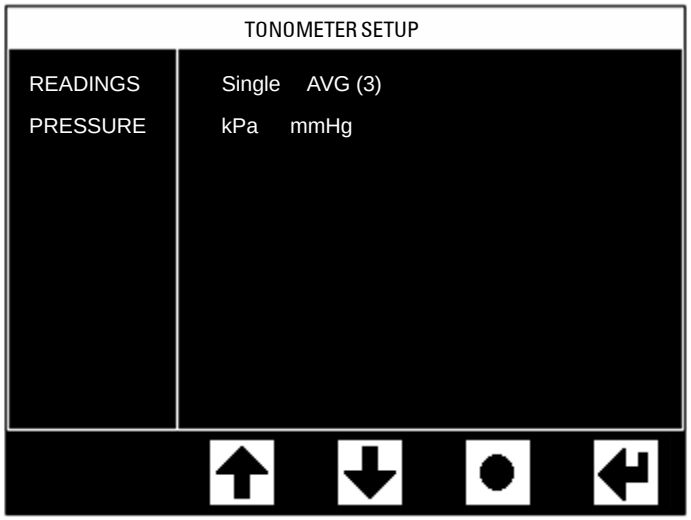
Language: **Eng**, Fra, Deu, Esp, Por, Ita
Tone: **On**, Off
Sleep: 5, **10**, 20, 90

Note: Default settings are shown in **Bold** type.

Instrument Setup (Continued)

Tonometer Settings





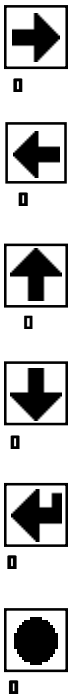
The following changes can be made to the default settings to modify the tonometer parameters:

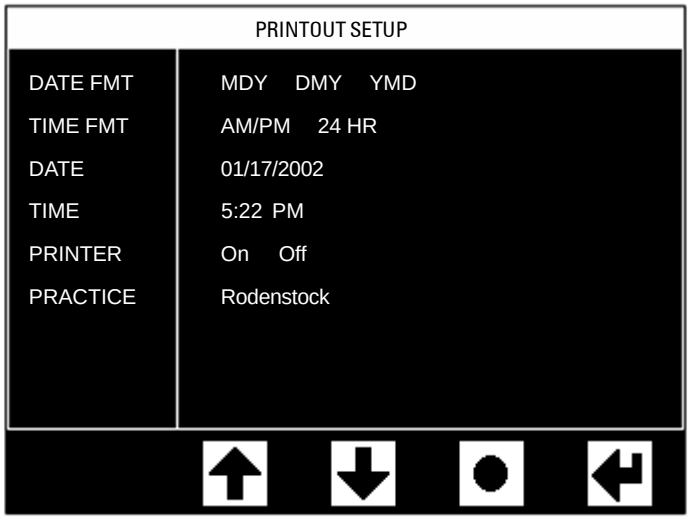
READINGS — Choose one measurement per eye (Single) or three measurements per eye with the average being shown Avg (3).

PRESSURE — Allows changes from kilo Pascals (kPa) to millimeters of mercury (mmHg). Millimeters of mercury is the default selection.

Instrument Setup (Continued)

Printout Settings



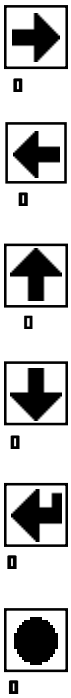


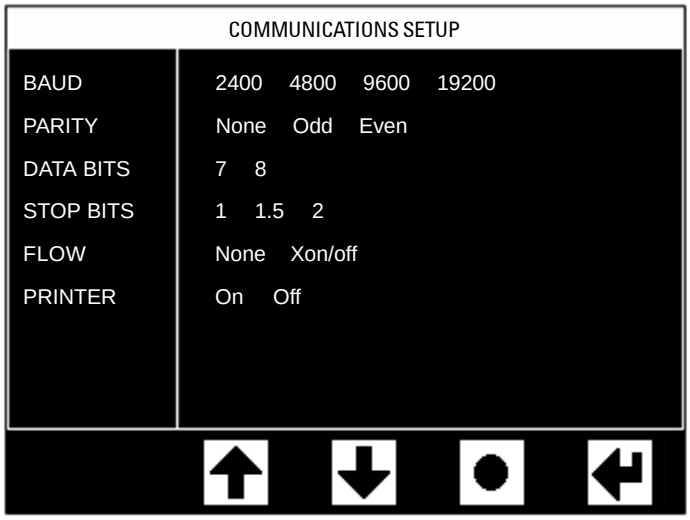
The following changes can be made to the default settings to modify the printout parameters:

Parameters	*Settings*
DATE FMT	Choose the printed format: D=Day, M=Month, Y=Year
TIME FMT	Choose the time format.
DATE	Once you have selected the option to be changed, use the PLUS (+) or MINUS (-) buttons to increase or decrease the numbers, then press the SELECT button.
TIME	Change the current time. Use the PLUS (+) or MINUS (-) buttons to increase or decrease the numbers, then press the SELECT button.
PRINTER	Permits the printer to be turned on or off.
PRACTICE	Up to 30 characters (letters and numbers) can be printed at the end of the printout. Change characters using the PLUS and MINUS buttons to scroll through the alphabet. Once you have found the letter you require, press the button below the RIGHT or LEFT arrow to move horizontally to the next letter. To exit, press the button below the SELECT icon, then the RETURN button.

Instrument Setup (Continued)

Communications Settings





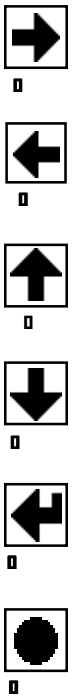
The NCT-800 can transfer data to an external device, such as a computer, through the RS-232C serial port. Make changes to the Communications Setup settings to match those of the external device connected to the instrument.

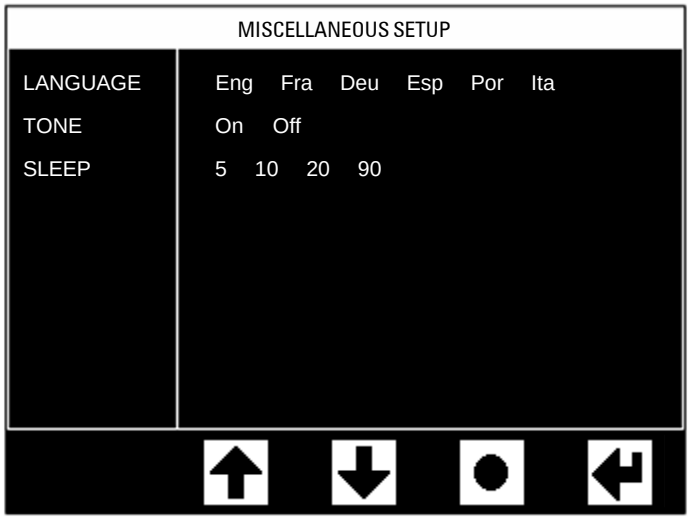
The following changes can be made to the default settings to modify the communications parameters:

Parameters	*Settings*
BAUD	Serial transmission data rate, relates to bits per second (bps).
PARITY	Bits added to data transmission used to detect transmission errors. Either None, Even, or Odd are the selections.
DATA BITS	Number of bits that make up data transmission word. Usually 7 or 8 bits in length.
STOP BITS	Number of bits added to the end of the data transmission word to signal the end of transmission. Usually 1, 1.5, or 2 bits in length.
FLOW	The means used to control data transmission flow between the sender and the receiver. Often called handshaking. Can be either hardware or software controlled or none.
PRINTER	This option sets the printer off so that data is sent only to the RS-232C serial port.

Instrument Setup (Continued)

Miscellaneous Settings





The following changes can be made to the default settings to modify the miscellaneous parameters:

Parameters	*Settings*
LANGUAGE	Sets the language which is used on the operator screen.
TONE	The audible tone indicator can be turned either On or Off.
SLEEP	Choose an inactivity period of 5, 10, 20 or 90 minutes before the instrument goes to “sleep” (the screen goes blank when it goes to “sleep” - press any button to “wake” the unit).

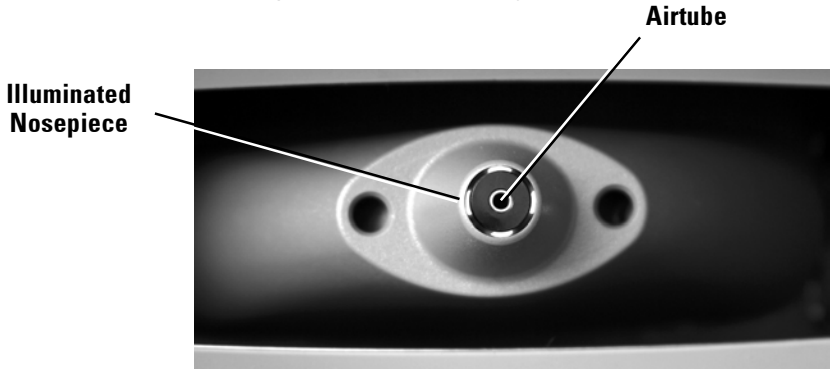
Once input power is applied to the instrument, the NCT-800's screen will display a screen similar to that shown below. After the calibration check is complete, press any button to continue. You are now ready to start using the instrument.

Note: If you have forgotten to disengage the Travel Lock, disengage it. Refer to Figures 4 and 5.

After you press any button, the Operator Display will show a message to move the headrest fully to the left or right if it is not already into position.

The NCT-800 features a fully automated alignment system which enables the instrument to align itself to the apex of the patient's left or right eye. This innovative system makes the measurement process quicker and more comfortable for the patient. Perform the following steps to take a measurement of the patient's eye.

1. Slide the headrest fully to either the left or right.



2. Instruct the patient to find the airtube located inside the illuminated nosepiece.
3. After they locate the airtube, have the patient find the green target inside the airtube and then slowly lean forward until their forehead is on the soft pad in the middle of the forehead rest.

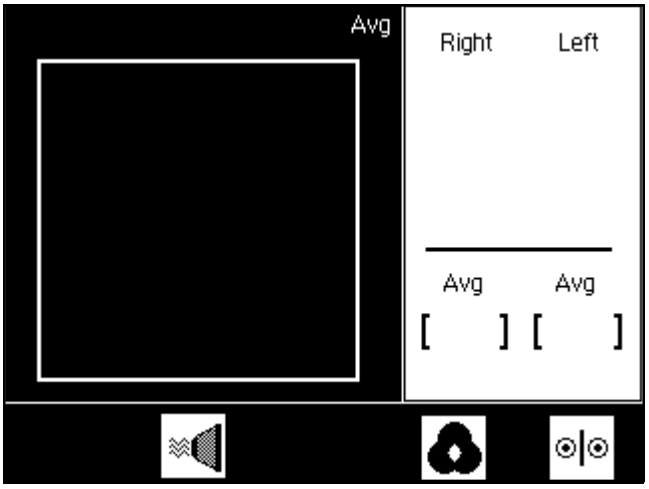
NOTE: If the patient cannot see the green target, use the canthus marks on the sides of the instrument to set the vertical alignment of the eye and then have the patient move forward until the center of their forehead is against the headrest pad.

- The patient should be seated comfortably and positioned in a way that encourages him / her to lean forward with their chin as close to the instrument as possible. This will reduce the difficulties associated with misalignment and non-measurement of the eye (refer to Figures 7 & 8).

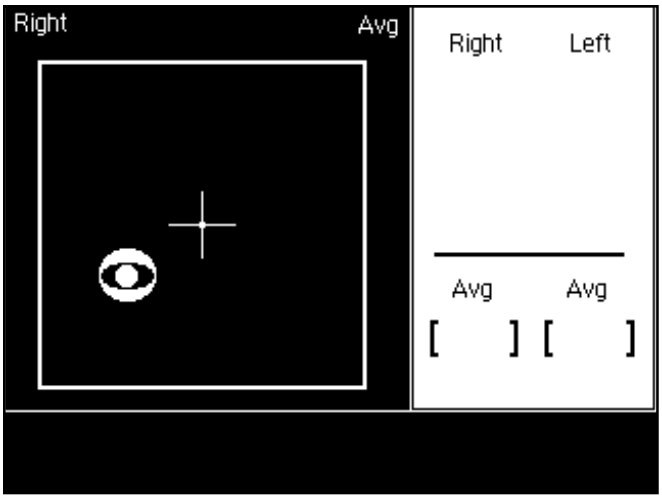
Figure 7 - Proper patient alignment (chin close to unit)

Figure 8 - Improper patient alignment (chin moved away from unit)

4. Once the patient is leaning against the forehead rest, press the Measure icon to begin the measurement process.



5. During the positioning process, the operator's screen will change and look similar to the one shown below. The measuring icon will move around on the LCD screen when the patient is within the instrument's acquisition zone. As the positioning system aligns to the apex of the eye, the measuring icon will move to the center of the screen and align over the center alignment mark (+). Once the positioning system is aligned the air "puff" is delivered to the eye and the pressure is acquired.



Note: If the instrument seems to have trouble acquiring the patient's eye during the measurement process (e.g., it keeps aligning but never takes a reading), it may be necessary to ask the patient to:

- **remain still and try not to move**
- **open his/her eyes wider, or**
- **tilt his/her head toward the window.**

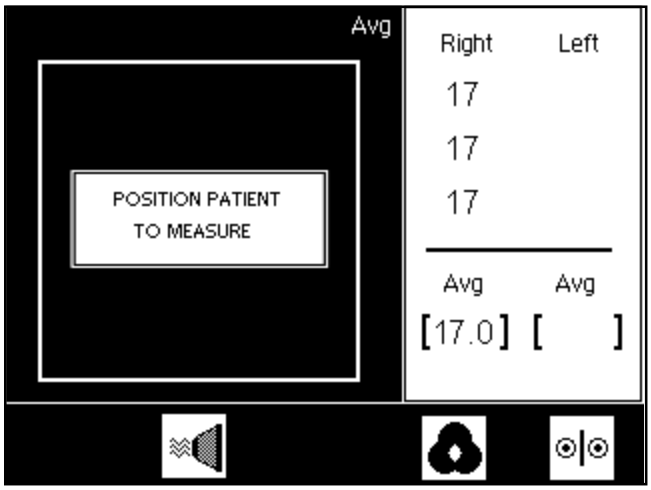
6. After their measurement is completed for the first eye, ask the patient to move their forehead away from the instrument.

Instructions for Use (Continued)

Alignment & Measurement (Continued)

7. There are several options available at this point:
   a. The Forehead Rest may be slid to the opposite side to continue taking measurements on the other eye.
   b. All data may be cleared and other measurements taken. (press the button below the CLEAR icon).
   c. The data can be printed by pressing the button below the PRINT icon.

Note: The instrument will print out the data from both eyes if the button below the PRINT icon is selected after both eyes are measured.

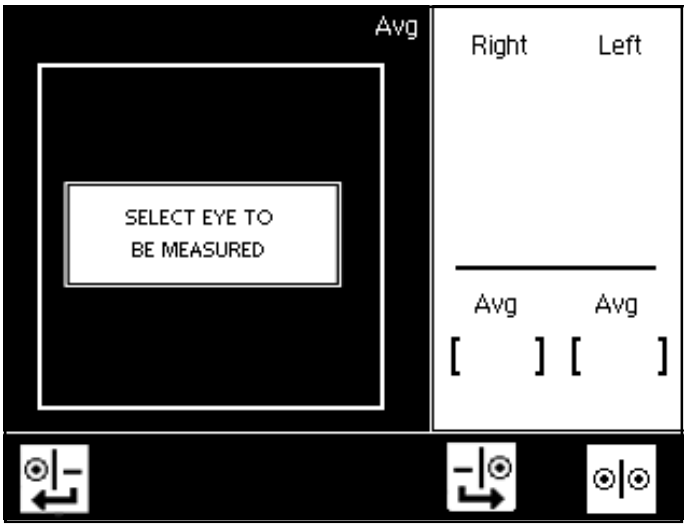


Instructions for Use (Continued)

Alignment & Measurement (Continued)

The NCT-800 should automatically detect which eye is being measured. This is displayed in the top left-hand corner of the screen.

If the system fails to detect which eye is being measured, the screen will change to that shown below:



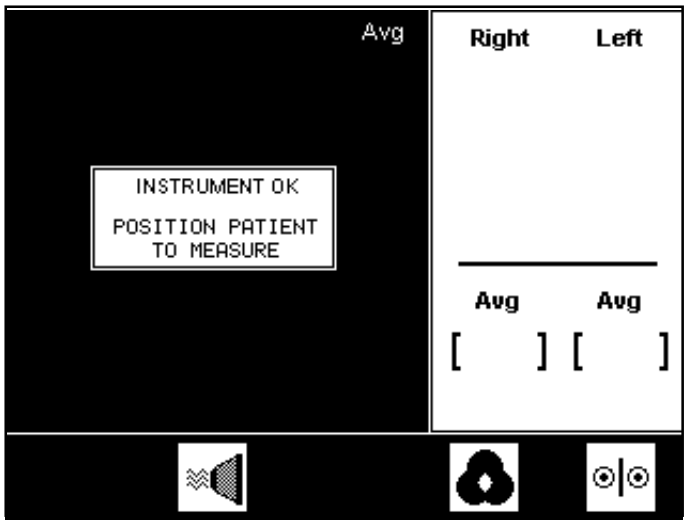
To select an eye and initiate a measurement, press the button below the patient RIGHT EYE MEASURE icon or the patient LEFT EYE MEASURE icon. The measurement process will then proceed as described on pgs. 15 thru 17.

Instructions for Use (Continued)

Low Confidence Readings

Pressing the button under the DEMO icon initiates a sample air puff. This can be used to demonstrate the air puff to the patient.

After each time the DEMO button is pressed and the air puff is delivered, an internal check of the NCT-800's systems is conducted to ensure optimum performance of your instrument.

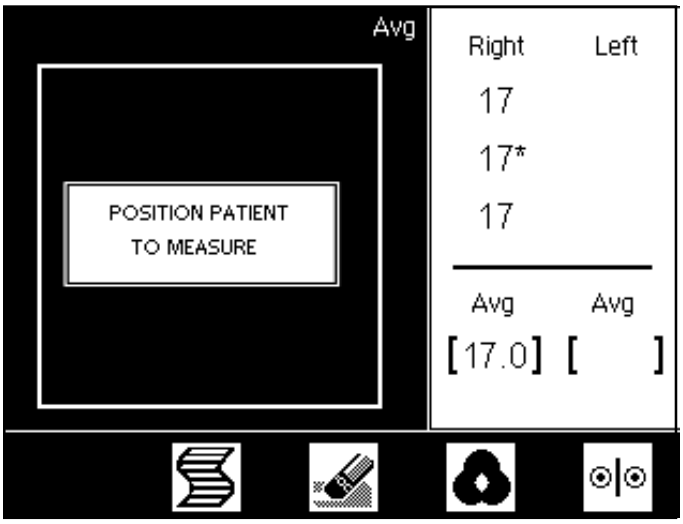


Instructions for Use (Continued)

Low Confidence Readings

During the measurement process, the NCT-800 may detect a condition which could create a low confidence reading which is identified with an asterisk after the reading.

Asterisk readings can result from an untimely blink or interference from a patient's eyelashes. These measurements are highlighted with an asterisk next to the reading as shown below.



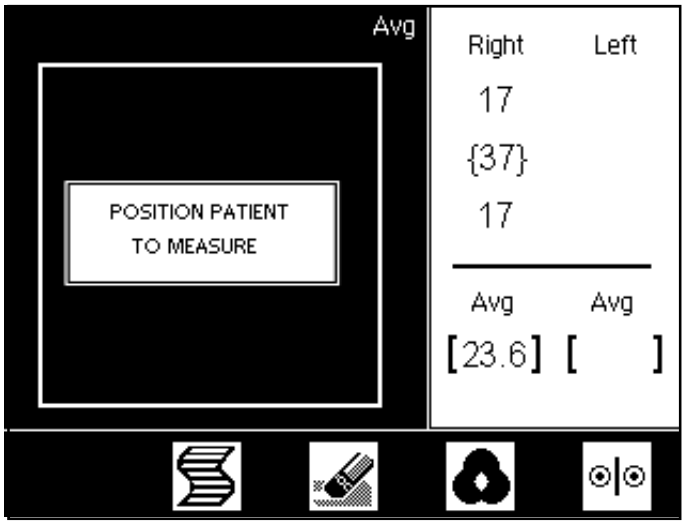
Note: If a reading has an asterisk following it, that reading will be used in the computation of the average value. If a fourth measurement is taken, the NCT-800 will replace the asterisk reading with the new reading.

Instructions for Use (Continued)

Low Confidence Readings (Continued)

Measurements with the NCT-800 are made within a few milliseconds after the instrument "puffs" the eye. Since this measurement cycle is so short, IOP readings can be acquired at different times within a cardiac pulse period. Therefore, repetitive readings for an eye may fluctuate from 2 to 4 mmHg during this cardiac period.

Occasionally a reading greater than 4 mmHg may be shown (referred to as a "flier") due to patient movement or other reasons. The NCT-800 distinguishes these readings by putting brackets around the value, as shown on the screen below.

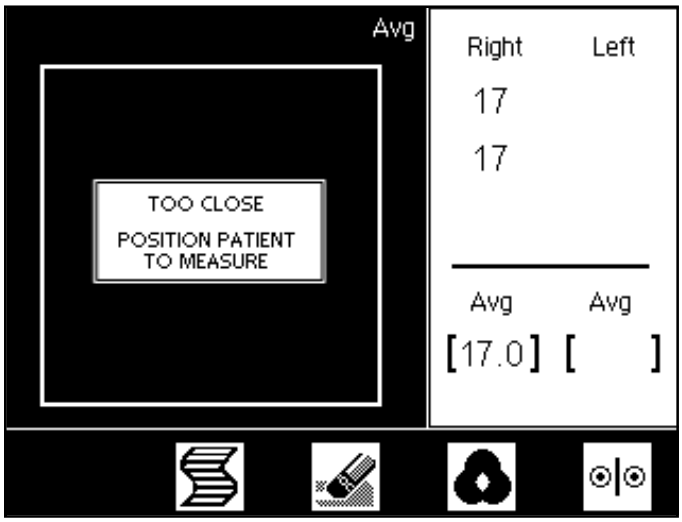


Note: If a reading is surrounded by brackets (a "flier"), it will be used in the computation of the average value and cause the average value to be out of range from the non-bracket readings. If a fourth measurement is taken, the NCT-800 will automatically replace the "flier."

Instructions for Use (Continued)

Too Close Activated

During the measurement process, the NCT-800 may detect a situation where the patient's eye is too close to the nosepiece. Should this occur, the instrument will back away from the patient's eye and then start aligning and measuring again. After three attempts, the instrument will back away completely, and the screen will change to that shown below.

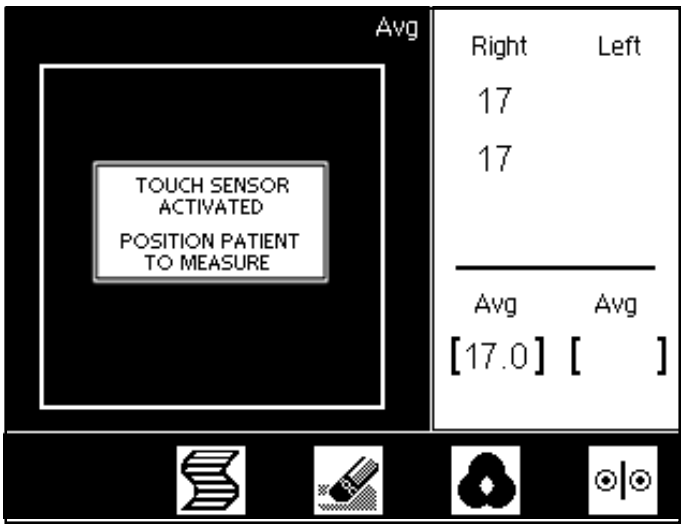


Should this situation arise, ask the patient to move away from the instrument, then reposition the patient and proceed with the next measurement.

Instructions for Use (Continued)

Touch Sensor Activated

If something, such as a finger, is placed inside the open space surrounding the NCT-800's nosepiece, the unit's screen will change to that shown below.



This is meant to prevent damage to the instrument and/or to prevent the possibility of causing injury to the patient. Should this situation arise, make sure the patient is not touching the NCT-800 anywhere near its nosepiece. The instrument will not function until the finger is removed.

Instructions for Use (Continued)

Printing Measurement Data

To print the measurement data, press the button below the PRINT icon.

A sample printout is shown below.

NAME_____
1-31-99 12:00PM

				Avg
(R)	17	17	17	17.0
(L)	16	16	16	16.0

NCT-800 Auto Tonometer

Figure 9 - Sample Printout

If you decide not to make a printout, press the button under the CLEAR DATA icon. This will clear all data from the memory and the screen. The instrument is now ready for the next patient.

Fuses

Fuses are located above the power inlet (Refer to page 7, Item# 10). Only replace fuses with T 0.315 AL 250V (230V units) as described on the power inlet panel.

An internal fuse is located on the main circuit board inside the unit, replace with T 6.3 AL 250V. Replacement must be performed by qualified service personnel only.

External Cleaning

Clean the external surfaces of this instrument using a clean, soft cloth moistened with a mild detergent solution (1 cc of liquid dish soap to one liter of clean, filtered water (filtered below 5 microns)).

Forehead Rest Cleaning

For hygienic reasons, the forehead rest may be cleaned with a clean cloth moistened with a mild detergent solution (1 cc of liquid dish soap to one liter of clean, filtered water (filtered below 5 microns)).

Note: If the forehead rest pad must be sanitized, a sterile wipe may be used occasionally.

Positioning Windows Cleaning

When the Positioning Windows become occluded with contaminants, degradation of the positioning signal occurrs. When signal degradation occurrs, the system may not recognize or position at the center of the eye. Consequently, the instrument will not find the center of the eye or it may align off center, which may prevent the unit from taking a measurement or can cause asterisk readings.

CAUTION: DO NOT USE ALCOHOL, SOLVENTS OR STRONG CLEANING SOLUTIONS ON THE ALIGNMENT WINDOWS OR DAMAGE TO THE WINDOWS WILL OCCUR.

1. Locate the Positioning Windows and wipe the outside surfaces with a clean, long handle cotton-tip swab moistened with a mild detergent solution (1 cc of liquid dish soap to one liter of clean, filtered water (filtered below 5 microns)) to remove dirt and contaminants.
2. Remove any remaining dust or foreign particles using only clean, dry, compressed air at less than 90 psig (620 kPa).

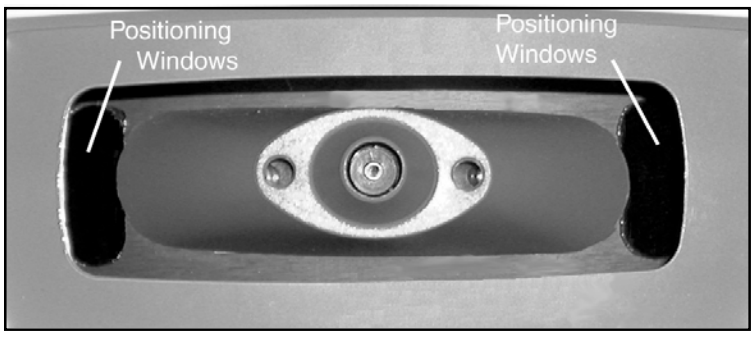


Figure 10 - Positioning Windows

Printer Paper

Instructions for changing printer paper can be found on the inside of the printer door. To order replacement thermal paper, call your local dealer and ask for replacement paper, catalog number 12441.

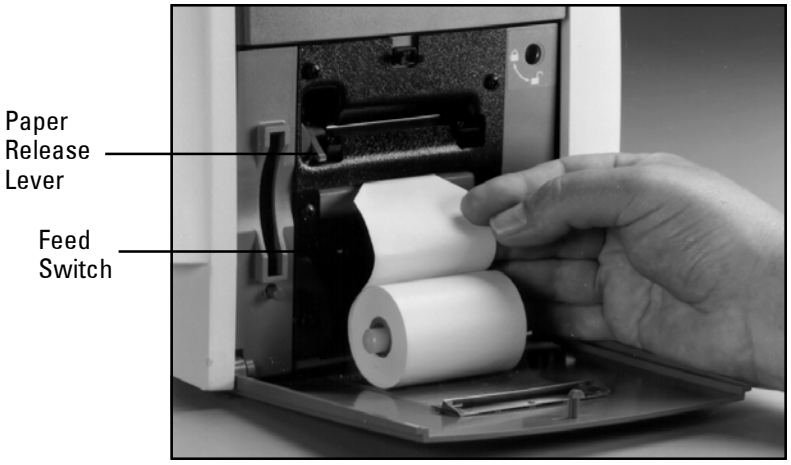


Figure 11 - Printer Paper Replacement

Instrument Stand Arm Installation

The NCT-800 can be installed on a table top or instrument stand arm. For instrument stand arm installation, follow the instructions below:

- Carefully lay the instrument on its side.
- Attach the adapter (Catalog No. 12418) to the base plate with the three screws provided.

CAUTION: USE ONLY SCREWS WHICH ARE PROVIDED IN THE ADAPTER KIT. DO NOT USE SCREWS LONGER THAN 1 INCH OR 2.5 CM, AS THIS COULD CAUSE DAMAGE TO INTERNAL COMPONENTS.

- Insert the adapter post into the mounting hole of the stand arm.
- Turn the knob on the instrument arm until the post is stable, The instrument should swivel freely.
- Plug the power cord into the instrument and then into the stand arm outlet.

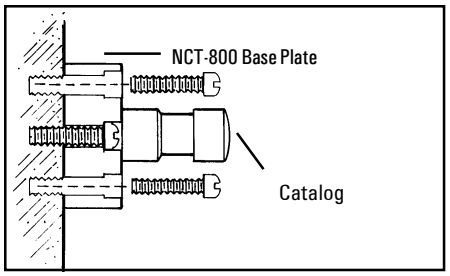


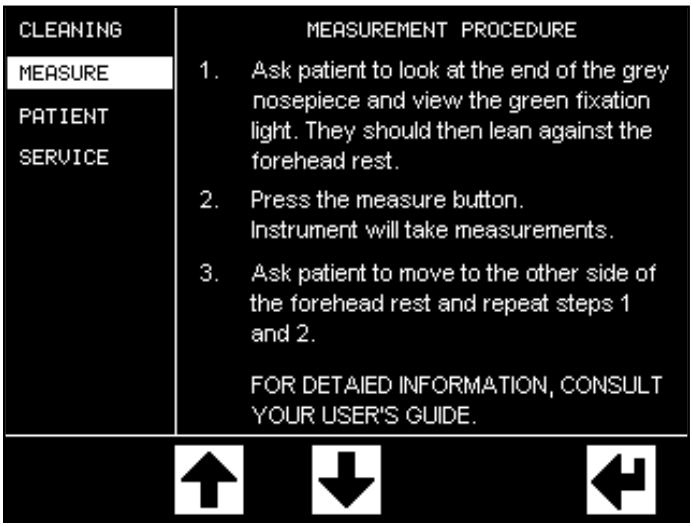
Figure 12 - Instrument Adapter

Troubleshooting

Help Screens

The NCT-800 includes HELP screens, which provide useful information and tips on its operation. These screens are intended to be used as a quick reference to a selection of operations.

To access the HELP menu, press the button below the MODE icon. The screen will change and look similar to that below:



Troubleshooting (Continued)

Troubleshooting Chart

The following chart provides details of common problems and solutions for the NCT-800.

Definition Probable Cause	Solution	
Screen blank.	Unit in Sleep Mode. No power applied to unit. Contrast knob turned down. Fuse(s) Blown.	Depress any button. Apply input power. Adjust contrast knob. Replace blown fuse(s) (Refer to page 26).
Instrument not responding.	Instrument is "locked up."	Press the red reset button behind the printer door.
Disengage Travel Lock shown.	Travel Lock engaged.	Disengage Travel Lock.
Too Close Message shown.	Eyelashes touching the end of the air-tube.	Have the patient open their eye wide.
Position Patient Message shown.	Patient not looking at green fixation LED.	Instruct patient to look for green LED, then move in toward headrest.
Does not find the eye (moves straight out , then goes straight back).	Dirty Positioning Windows External light confusing positioning system.	Clean the Positioning Windows (Refer to the *Maintenance* section of this manaul). Isolate sources of external light (incandescent and/or infrared) and remove light source.
Finds one eye not the other. Infrared interference.	Light interference on measuring side	Remove interference (infrared light source).
Tries three times to find the eye then returns to the home position.	Proximity detector is activated.	Eliminate touching end of nosepiece.
Will not take a reading.	Patient not holding still. Patient's eye too far from Patient Window. Patient not focusing on target (eye moving around). Patient has dry eye.	Encourage patient to remain still. Have patient move toward nosepiece. Have patient look only at target. Have patient blink eyes.
Asterisk readings or No Applanation readings.	Unit needs reboot of hardware. Dirty Positioning Windows.	Unplug unit, wait 2 minutes then apply input power. Clean the Positioning Windows (Refer to the *Maintenance* section of this manual).
Printer not printing.	Printer out of paper. Printer paper in backwards. Not using thermal paper.	Replace paper with P/N 12441. Reverse the printer paper. Replace paper with P/N 12441.

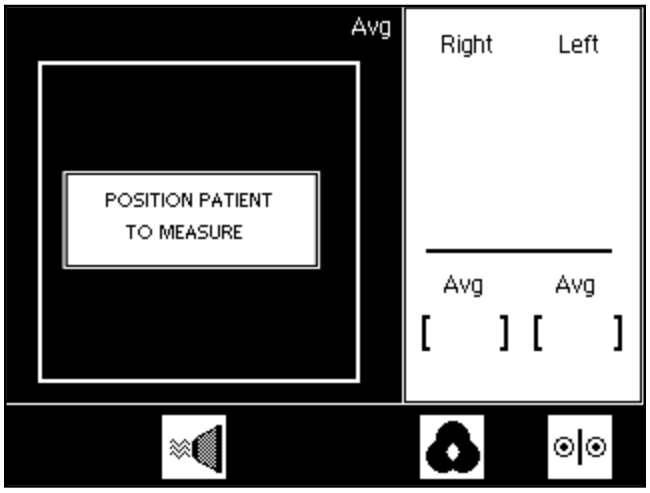
If problems still persist, contact your local dealer or Rodenstock as shown in the *Introduction* section of this manual.

Troubleshooting (Continued)

Engaging the Travel Lock

If it is necessary to ship the instrument to another location, engage the travel lock as follows:

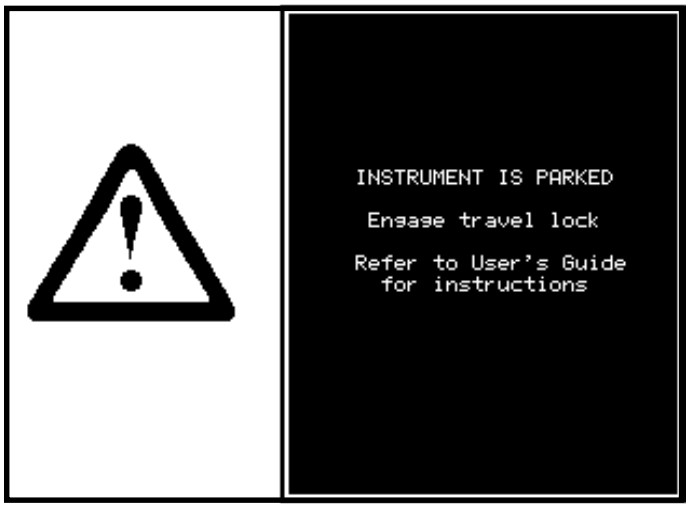
Press the button below the MODE icon. The MODE icon can be found on most operating screens. After pressing the mode button the screen will change and look similar to the one below. Now



press the button below the TRAVEL LOCK icon - you will hear the instrument's motors moving and position into the "parked" position.

- Continued -

The screen will change (as shown below) to indicate the instrument is in the "parked" position.



Once the instrument is "parked," you can engage the Travel Lock. Perform the following steps to engage the Travel Lock (for illustrations of the Travel Lock and packaging, refer to the *Instrument Setup* section in this manual):

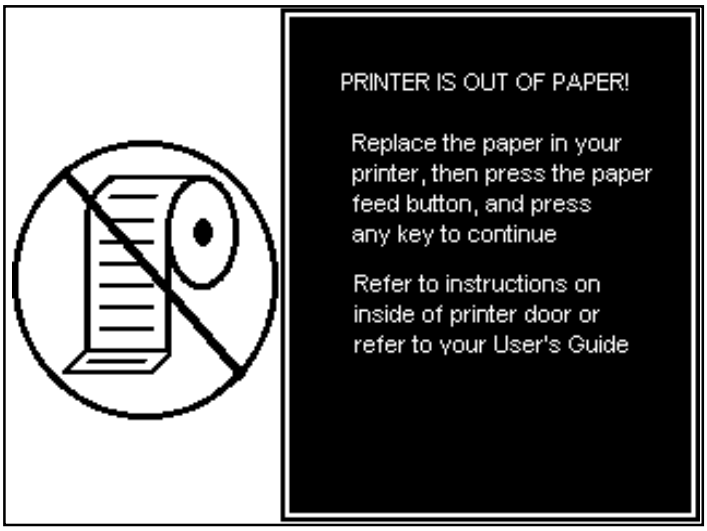
1. Open the Printer Door by pushing on the door above the printer paper slot.
2. Insert the Phillips head screwdriver into the hole of the Travel Lock and locate the screw inside the Travel Lock.
3. Push in on the screw and turn it six full turns clockwise (or until it is hand-tight).
4. Remove the screwdriver, align the printer paper through the paper slot and close the door.

If transportation of the instrument is required, you may now disconnect the input power to the instrument and repackage the instrument.

Troubleshooting (Continued)

Print-Related Errors

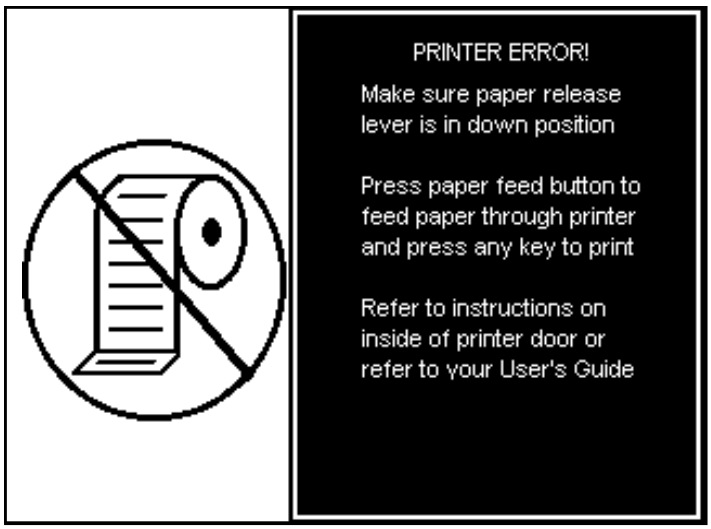
If your printer is out of paper, the following message will appear:



Instructions for changing printer paper are located on the inside of the printer door (refer to the *Maintenance* section of this manual).

Note: If the printer paper runs out before printing all the measurement data, the data will be stored. Once the printer paper is replaced, a complete print out of all measurement data will start.

Note: After replacing printer paper, if you do not lower the paper release lever, follow the instructions on the screen. The following screen will appear:



Appendix A - General Specifications

Specifications:

Height:	17 in., 43.0 cm.
Width:	9 1/2 in., 24.0 cm.
Depth:	13 1/2 in., 34.0 cm.
Weight, unpacked:	30 lbs., 13.6 kg.
Voltage:	220V/240V
Current:	0.5 amp
Frequency:	50/60 Hz
Measurement Range:	0 - 60 mmHg (0 - 8.0 kPa)

Transportation & Storage

This instrument can withstand the following conditions while packed for transportation or storage:

- an ambient temperature range of -40°F to +158°F (-40°C to + 70°C);
- a relative humidity range of 10% to 90%;
- an atmospheric pressure range of 14.7 inHg to 31.3 inHg (50.0 kPa to 106.0 kPa).

Exposure to these extreme conditions indicated above should not exceed 15 weeks.

Disposal

This product does not generate any environmentally hazardous residues. At the end of its product life, follow your local laws and ordinances regarding the proper disposal of this equipment.

Appendix A - General Specifications (Continued)

Classification

The NCT-800 is classified as Class 1 Equipment
Class 1 Equipment is equipment in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in that means are provided for the connection of the equipment to a protective earth conductor in the fixed wiring of the installation in such a way which accessible metal parts cannot become live in the event of a failure of the basic insulation.

The NCT-800 is classified as Class B Equipment
Class B Equipment provides an adequate degree of protection against electrical shock, particularly regarding allowable leakage currents and reliability of the protective earth connection.

The NCT-800 is classified as IPX0 Equipment
IPX0 Equipment is ordinary equipment enclosed without protection against ingress of water.

The NCT-800 is not suitable for use in the presence of flammable anesthetic mixtures with air or with oxygen or nitrous oxide.

According to the mode of operation, the NCT-800 is a Continuous Operation instrument.

Symbol Information

The following symbols appear on the instrument:

CAUTION - Indicates that important operating and maintenance instructions are included in this User's Guide.

Type B Product Classification
Class 1 Equipment, Continuous Operation

Alternating Current

Protective Earth

CE 0120 Compliance to Medical Device Directive 93/42/EEC

Notes

Ordering Information - Accessories

Catalog	***Description***
12418	Instrument stand adapter mount
12430-273	Cleaning Cloth
12441	Printer paper
13920-084	Dust Cover
13909-104	NCT-800 Quick Reference Card

To order any of these accessories, contact your local authorized Rodenstock dealer.

WECO Optik GmbH
Jägerstraße, 58
D-40231 Düsseldorf
Germany

ISO-9001 Certified

RODENSTOCK

13909-101-Rev. B 10/02