Model 125X
MiniPrinter Series

User's Manual

UNITED STATES

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

CANADA

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 Class A prescrites dans le Règlement sur le brouillage radioélectrique que edicté par le ministère de2s Communications du Canada.

CAUTION

Risk of electrical shock. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Weigh-Tronix reserves the right to change specifications at any time.

June 29, 2006 125X_U.indd PN 7424-15020i e2 Printed in USA

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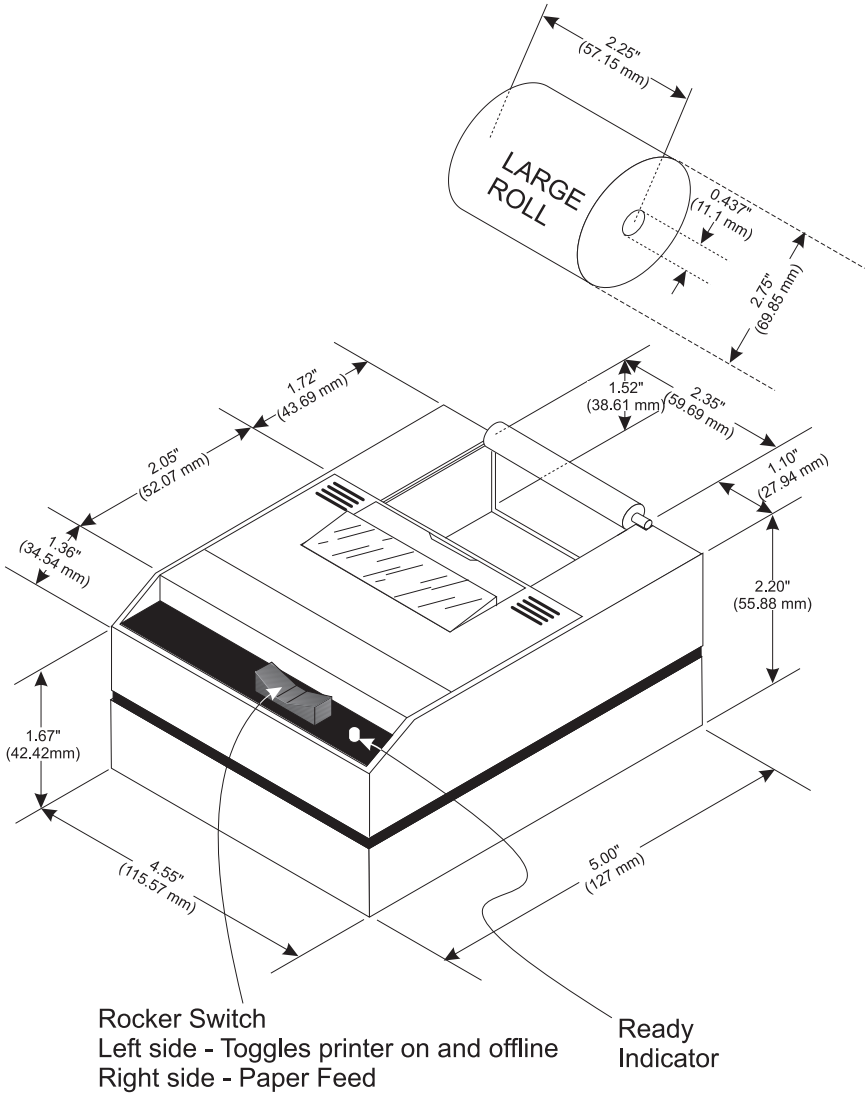
Specifications

Interface-Serial	*Available baud rates*: 300, 600, 1200, 2400, 4800, 9600, 19200 *Voltage levels:* RS-232C: -9 Volts to +9 Volts TTL: 0 Volts to +5 Volts 20mA current loop RS-2485: 200mV differential *Character format:* Standard ASCII character set—10 or 11 bits per character, 7 or 8 data bits. Even or odd parity selection for 7 data bits. Bit mapped graphics—10 bits per character Busy signal - Clear to Send (CTS, XON-XOFF)
Interface-Parallel	36-pin Centronics connector
Character Buffering	*1.5K standard* *8K optional* Approximately 9,500 byte capacity with option installed.
Print Method	Impact dot matrix
Character Matrix	5 x 5, 5 x 7, 5 x 8
Character Spacing	24 column: 12.8 characters/inch 32 column: 17 characters/inch 40 column: 21 characters/inch
Line Feed Spacing	7.4 lines per inch
Print Speed	130 lines per minute for 24 column 110 lines per minute for 32 and 40 column
Paper	Table top: 2.25”W x 2.75”D; 0.44” I.D. Panel mount: 2.25”W x 1.25”D
Power	1.5 Watts (idle), 15 Watts maximum while printing
AC Voltage	9 VAC (120 VAC stepdown converter included) Multi-national converters optional
DC Voltage	Optional 9-12 VDC 140mA idle, 1 amp with 100% printing, 5.5 amp peak with 100% printing
External Dimensions	4.6”W x 5.0”L x 2.2”H

Operating Temp.	5°C - 40°C, 41°F - 104°F
Print Head Life	1,500,000 lines mean character before failure.
Ribbon life	Black - 200,000 characters Purple - 250,000 characters
Paper	Large roll - 12,500 lines Small roll - 3,000 lines



Introduction

The Model 125X impact printer series consists of these models and electronic interfaces:

Model 1250 - RS-232
Model 1251 - Parallel
Model 1252 - TTL
Model 1253 - Current Loop
Model 1254 - RS485

This manual is split into the following main sections:

- Introduction
- Installation
- Operation
- Maintenance
- Printer Test and Setup
- Communication

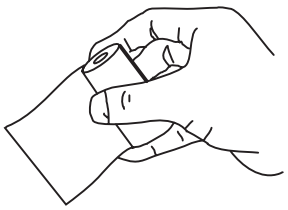
Installation

Please follow the precautions listed below when setting up your printer. They are designed to help you keep your printer working at its best.

* Plug your power supply into an appropriate grounded outlet.
* Place your printer on a flat hard surface, like a tabletop.
* Keep your printer out of direct sunlight.

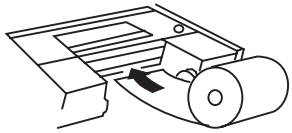
Installing the Paper

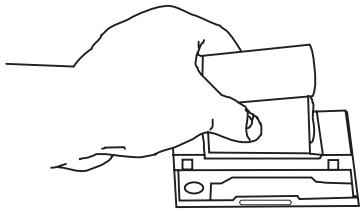
1. Remove the printer cover by pressing on the groove patterns to pop the front edge up. Lift off the cover.
2. Press the rocker switch to the left. The light will go off.
3. Unroll several inches of the paper.



4. Cut a straight edge on the paper roll if it is jagged. This will facilitate the entry of the paper into the printer.

5. Slide the paper through the slot connecting the paper compartment and the printer compartment. You can slide it in about one-quarter inch before it stops.

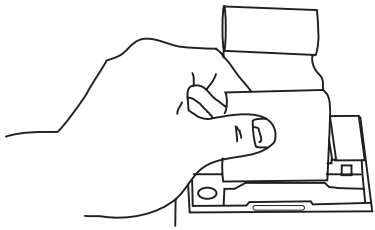




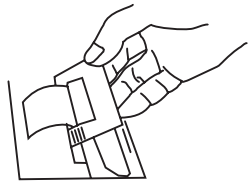
6. While holding the paper in place, press the rocker switch to the Paper Feed position. The printer will activate, and a rubber roller will pull the paper into the printer compartment. Hold the switch in the Paper Feed position until the paper emerges from the top of the printer mechanism.

7. When an inch of paper has emerged from the top of he printer, release the Paper Feed button.

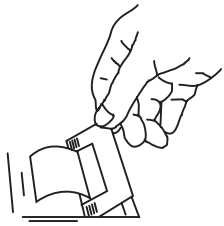
8. Now pull the paper through the printer, until several inches are exposed.



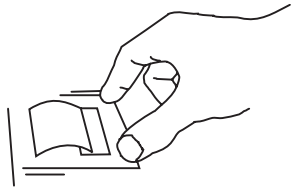
9. Slide the paper through the slot in the printer cover.



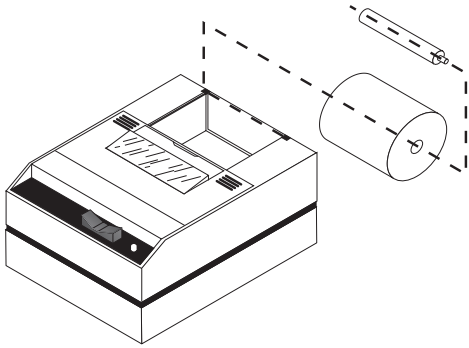
10. Push the back of the printer cover down and into place.



11. Press the front of the printer cover down to lock in place.



12. Put the paper spindle into the paper roll as shown below, and place the roll with the spindle onto the snaps near the back of the printer. Turn the paper roll to take up any slack in the paper feeding to the printer. Make sure the roll of paper turns freely. If it does not turn freely, the paper will jam and will possibly damage the printer mechanism.



To Remove the Paper Roll

1. Advance the paper about one inch beyond the paper cutter by using the Paper Feed switch.
2. Lift the paper roll away from the printer housing and cut the paper feeding to the printer with scissors. Try to make the cut as square as possible to help the next time you reload the paper.
3. Pull the remaining paper through the printer mechanism. **Be sure to pull the paper from the top** (paper cutter side).

WARNING! Pulling the paper out of the back of the printer will damage the print mechanism

Operation

Connecting and Powering Up Your Printer

For DC modified units supplied with cable, connect positive voltage to striped wire.

See the DC power connection illustration below:

1. Attach the appropriate cable between the printer and your host device. The connector on the printer side is “keyed” so that you cannot plug the cable in the wrong way. This means that the pins should be positioned so that a slight pressure will seat the cable properly. Do not force the pins in. Doing so could damage the cable.
2. Plug the power cord into the back of the printer. Plug the transformer into an appropriate AC outlet. The unit will power up automatically and print *Ready*. This means the printer is ready to print.

The Paper Feed switch on the printer is a rocker type switch. Push the left side of the rocker switch to toggle the printer on and offline. Push the right side of the switch to advance the paper.

Your printer is now ready for printing.

The printer stores characters for printing until one of two things happens:

1. The line buffer is filled.
2. It receives a line feed (hexadecimal 0A) or a carriage return (hexadecimal 0D) code.

When (1) or (2) occurs, the printer prints out the contents of its line buffer. If the buffer is empty when the carriage return is received, the printer simply advances the paper one line, leaving a blank line in the printout.

Maintenance

When printing becomes faint or difficult to see, replace the ribbon in your printer with an NCI cartridge ribbon.

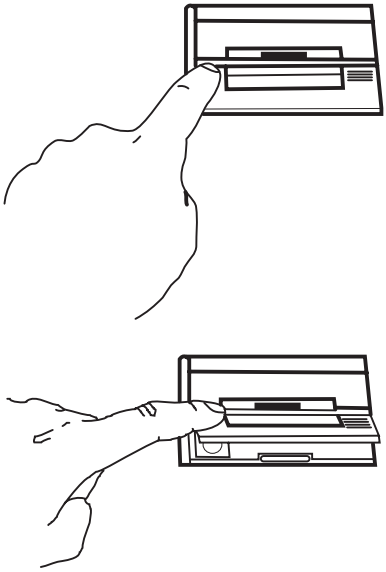
Item	NCI Part Number
Black ribbon	22332-0029
Purple	22332-0011
Long-lasting Black	22332-0045
Wall mount power	114815534
Paper spindle	109316536
Paper roll 1.25” dia.	22335-0018
Paper roll 2.75” dia.	22335-0026
Almond paper cutter	23019-0019
Grey paper cutter	23019-0043
Clear plastic paper roll cover	115513184

Changing the Printer Ribbon

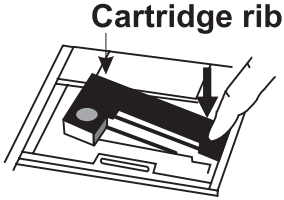
If your printer is used infrequently, the print impression may become weak because the ribbon has dried out. To advance the ribbon to a new section, hold down the Paper Feed switch for several seconds.

Below are the steps for replacing the ribbon:

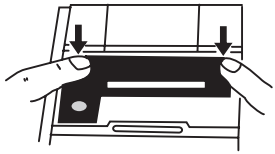
1. Turn the printer offline.
2. Four small grooves are embossed on each side of the printer cover. Push down on one or both of these areas until the printer cover tilts.



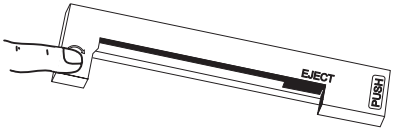
3. When the printer cover is tilted up, lift it completely off.
4. Push down on the right side of ribbon cartridge where it is marked “PUSH”. Remove the cartridge.



5. Install new cartridge. Be sure the ink cartridge is inserted firmly to prevent weak or irregular printing. The cartridge must be properly seated and aligned for best printing.



6. Turn the cartridge “knob” (marked by an arrow) clockwise to stretch the ribbon.

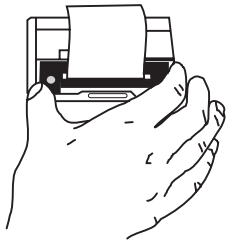


7. Replace the cover.
8. Replace the paper.

Inserting a Ribbon with Paper in the Printer

If you get ribbon ink on the printer case, wipe it off immediately. Once it dries it is difficult to remove.

You may insert the ribbon cartridge if there is already paper in the printer.



Hold the cartridge as shown above and slide it over the paper and into the printer compartment. Be sure the paper goes between the ribbon cartridge and the ink ribbon.

Printer Test and Setup

The printer can be tested and setup using the steps described in this section. Testing and setup are done using the rocker switch on the printer.

Printer Test

With the printer unplugged at the outlet or at the back of the printer, press and hold the right side of switch as you plug the unit in. The printer will print out a list of the configuration as it currently exists then do a continuous print test. To stop the print test, press either side of the rocker switch. Below is a sample of what is printed when you do the print test.

```
** PRINTER TEST **
Serial Version   A125XA
A.8
BAUD=1200
DATA BITS=8
PARITY=NONE
STOP BITS=1
HSHAKE=BUSY-BUFF
COLS=32
FONT=5x7
INVERT=NO
MAG=NONE
BUFFER: 1.5K
INT RAM: OK
ROM: OK
EEPROM: OK
!"#$%'( )*+,-./0123456789:;<=>?@
"#$%'( )*+,-./0123456789:;<=>?@A
#$%'( )*+,-./0123456789:;<=>?@AB
$%'( )*+,-./0123456789:;<=>?@ABC
```

Accessing the Setup Menu

To access the setup menu follow these steps:

1. Unplug the printer either at the outlet or at the back of the printer.
2. Press and hold down the left side of the rocker switch and plug in the printer. The printer will advance the paper. After the paper advance has stopped, count 3-5 seconds and release

the switch. The following is printed:

```
  *** SETUP MENU ***
CONFIGURE...          [NEXT/OK]
```

If you wait less than three or more than five seconds ***Ready*** is printed and you will have to complete steps 1 and 2 again to access the setup menu.

This manual assumes the time and date option are installed and operating. If you do not have this option you will not see references to the clock or date listed in most menus.

After you access the setup menu, if you press ***NEXT*** (left side of switch) repeatedly you will see the following list printed. If you keep pressing ***NEXT*** (left side) the list repeats itself.

```
  *** SETUP MENU ***
CONFIGURE...          [NEXT/OK]
CUSTOM...             [NEXT/OK]
SET CLOCK...          [NEXT/OK]
RESET SEQ#...         [NEXT/OK]
CONFIGURE...          [NEXT/OK]
```

As you can see from the above printout the setup menu contains the following items:

- **CONFIGURE menu**
- **CUSTOM menu**
- **SET CLOCK menu**
- **RESET SEQ#**

CONFIGURE

The following pages explain these items and how to customize the printer to your needs.

The first setup menu item reads

CONFIGURE [NEXT/OK]

[NEXT/OK] is a visual clue so you know that pressing the left side of the rocker switch will go to the ***NEXT*** part of the menu and that pressing the right side of the rocker switch will accept (or say ***OK*** to) what this line of the setup menu says.

With the printer in the setup menu and with

CONFIGURE [NEXT/OK] as the last item printed, press ***OK*** (right side) to access the ***CONFIGURE***

menu. The following is printed:

```
   *** SETUP MENU ***
CONFIGURE...          [NEXT/OK]
*** CONFIGURATION MENU ***
LOAD DEFAULTS         [NEXT/OK]
```

Load Defaults

LOAD DEFAULTS gives you the opportunity to reset the printer to all default settings (shown below).

The complete list of defaults is shown in the Default Table at the end of this manual.

** The parallel interface does not have these selections.*

```
   ***  CONFIGURATION  MENU  ***
   LOAD  DEFAULTS        [NEXT/OK]
*  BAUD=1200             [NEXT/OK]
*  DATA BITS=8           [NEXT/OK]
*  STOP BITS=1           [NEXT/OK]
*  HSHAKE=BUSY-BUFF      [NEXT/OK]
   COLS=32               [NEXT/OK]
   INVERT=NO             [NEXT/OK]
   FONT=5x7              [NEXT/OK]
   MAG=NONE              [NEXT/OK]
   Ready...
```

Choose ***OK*** to do this or ***NEXT*** to go to the next parameter. The following is printed:

```
   *** SETUP MENU ***
CONFIGURE...          [NEXT/OK]
*** CONFIGURATION MENU ***
LOAD DEFAULTS         [NEXT/OK]
BAUD=1200             [NEXT/OK]
```

Baud Rate

Baud rate is the next parameter you can set in the ***CONFIGURE*** menu. The complete list of parameters and their possible values is shown below.

The sample list above shows the current baud rate is 1200. To accept this, press ***OK*** (right side) or view the next baud rate value by pressing ***NEXT*** (left side). Press ***OK*** when the baud rate you want is displayed. Choose from these baud rates: 300, 600, 1200, 2400, 4800, 9600, or 19200

Data Bits

DATA BITS is the next parameter. Choose the data bit value the same way baud rate was chosen. Choices are 7 or 8 data bits. If you choose 7 data bits you can select EVEN or ODD parity. If you choose 8 data bits parity defaults to NONE.

Stop Bits

STOP BITS is the next parameter. Choose 1 or 2 stop bits. 1 stop bit is used for 10 bit words, 2 stop bits are used for 11 bit words.

Handshake

Handshake is used for serial interface only

HANDSHAKE is the next parameter. Choose from the following settings:

BUSY-LINE
BUSY-BUFFER
XON/XOFF-LINE
XON/XOFF-BUFFER
NONE

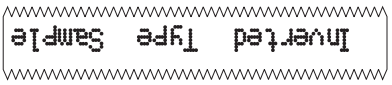
Columns

COLUMNS is the next parameter. Select the number of characters per line (columns) for this parameter. The choices you have are 24, 32, or 40. Below are samples of each:

```
24 Column Text
32 Column Text
40 Column Text
```

Invert

INVERT is the next parameter. Choose YES if you want inverted text (upside down) or NO if you want non-inverted text (right side up) in your printouts. Below is an example of inverted text.



Font

FONT is the next parameter. Choose from a 5 x 5, 5 x 7, or 5 x 8 dot matrix print pattern. The 5 x 5 dot pattern produces only upper case (capital) letters. The other two fonts can output upper and lower case letters.

```
5 X 5 TYPE IS ALWAYS CAPITALS
5 x 8 Upper and Lower Case
```

Magnification

The last parameter is ***MAGNIFICATION***. This refers to the size of printed type from your printer. Your choices (with examples) are

NONE NONE

DOUBLE WIDE DOUBLE WIDE

DOUBLE HIGH DOUBLE HIGH

DOUBLE WIDE/HIGH

DOUBLE WIDE/HIGH

After you choose one of the magnifications the printer will print ***Ready*** to show the printer is out of the configuration menu and the setup menu and is ready to print.

CUSTOM

The next setup menu item after ***CONFIGURE*** is ***CUSTOM***. With the printer in the setup menu and with ***CUSTOM*** as the last item printed, if you press OK (right side) the printer will print the following:

```
   *** SETUP MENU ***
CONFIGURE...          [NEXT/OK]
CUSTOM...             [NEXT/OK]
****** CUSTOM MENU ******
PRINT CUSTOM SETUP    [NEXT/OK]
```

If you press ***OK*** the printer will print the current custom setup. A sample is shown below.

```
** CUSTOM SETUP **
CLOCK: INSTALLED
CLOCK: NOT SET
MM/DD/YY hh:mm ?M DOW
AUTO T&D=NO
AUTO SEQ=NO
ZERO=0
POUND  SIGN=#
_ (Underscore)
BUSY INVERT=NO
ONLINE/OFFLINE=YES
EXT CH SET=NO
PRINT READY=YES
Ready...
```

This printout shows you how each item is currently set. Below is an explanation of each item and the choices you can make for each.

This manual assumes the time and date option is installed and operating. If you do not have this option you will not see references to the clock or date listed in most menus.

T/D Format

TIME/DATE FORMAT is the next parameter. Choose from the following formats.

This feature is available only on units with the time/date option installed.
Time/Date option is Y2K compatible.

MM/DD/YY hh:mm ?M
MM/DD/YY hh:mm ?M DOW
MM/DD/YY hh:mm
MM/DD/YY hh:mm DOW
DD-MM-YY hh:mm ?M
DD-MM-YY hh:mm ?M DOW
DD-MM-YY hh:mm
DD-MM-YY hh:mm DOW
DD/MON/YY hh:mm ?M
DD/MON/YY hh:mm ?M DOW
DD/MON/YY hh:mm
DD/MON/YY hh:mm DOW
NONE

MM = month
DD = day
YY = year
hh = hour
mm = minutes
?M = AM or PM
DOW=Day of week

Auto T&D

AUTO TIME AND DATE is the next parameter. Your choices are:

YES - autoprint after CR (carriage return)
NO - do not autoprint after CR

Autoprint of the time and date will not occur unless three seconds has elapsed since the printer has stopped printing.

Auto Seq#

AUTO SEQUENCE NUMBER is the next parameter. Choices:

YES - autoprint sequence number after CR
NO - do not autoprint sequence number after CR

Autoprint of the sequence number will not occur unless three seconds has elapsed since the printer has stopped printing.

Zero

ZERO is the next parameter. Choose how you want the zero character to look in your printouts. Choose between **0** and **Ø**.

Pound Sign

POUND SIGN is the next parameter. Choose to show pound as **#** or as the British sterling pound symbol **£**.

_Underscore

UNDERSCORE is the next parameter. Choose which symbol the same ASCII code will print, an underscore () or a left arrow (➔).

Busy Invert

BUSY INVERT is next. This controls the logic level for a busy signal for the CTS line.

Choices:

YES - voltage will be in a low state until the unit is busy then voltage level goes high.

NO - voltage will be in a high state until the unit is busy then voltage level goes low.

Online/Offline

ONLINE/OFFLINE is next.

Choices:

YES - enables the rocker switch to turn the printer offline.

NO - disables the ONLINE/OFFLINE ability.

Ext Ch Set

The choice to use the extended character set is available only when 8 data bits are chosen.

EXT CH SET is next. This stands for Extended Character Set.

Choices:

YES - Allows you to use hexidecimal numbers above 80 (true only for 8 data bits.)

NO - Disables the Extended Character Set ability.

Print Ready

PRINT READY is next.

Choices:

YES - Prints ***Ready*** upon power up.

NO - Disables printing ***Ready***

> ***WARNING -*** If you choose ***NO***, then you will need to hold the left side of the rocker switch down for 4 to 6 seconds to access the setup menu. Begin timing when you connect power to the unit and the red light comes on. The paper feed motor does not run upon power up when ***Ready*** is disabled.

SET CLOCK

The next item in the Setup Menu is ***SET CLOCK.*** With the printer in the setup menu and with ***SET CLOCK*** as the last item printed, if you press ***OK*** (right side) the printer will print the following:

```
SET CLOCK...                [NEXT/OK]
*** SET DATE ***
Set Year:  00.........[NEXT/OK]
```

The printout shows the year currently in memory. The ***0*** is reversed (white on black) to show the position of the cursor. This is the number which will be incremented if ***NEXT*** (left side) is pressed. If the number is correct press ***OK*** (right side) and the following is printed:

This feature is available only on units with the time/date option installed.

```
SET CLOCK...                [NEXT/OK]
*** SET DATE ***
Set Year:   20.....[NEXT/OK]
Set Year:   00.....[NEXT/OK]
```

The cursor now appears over the 2nd position. Press ***NEXT*** (left side) to increment this number if needed and ***OK*** if it is right. Continue this sequence of accepting or changing the year, month, day, and DOW (Day Of Week).

DOW :
0=Sunday
1=Monday
2=Tuesday
3=Wednesday
4=Thursday
5=Friday
6=Saturday

```
  *** SETUP MENU ***
CONFIGURE...                [NEXT/OK]
CUSTOM...                   [NEXT/OK]
SET CLOCK...                [NEXT/OK]
*** SET DATE ***
Set Year:   20.....[NEXT/OK]
Set Year:   00.....[NEXT/OK]
Set Mon:    01.....[NEXT/OK]
Set Mon:    01.....[NEXT/OK]
Set Day:    01.....[NEXT/OK]
Set Day:    01.....[NEXT/OK]
Set DOW:     1.....[NEXT/OK]
```

When you have completed the ***SET DATE*** menu the following is printed automatically:

```
*** SET TIME ***
Set Hour: 16..... [NEXT/OK]
```

Choose ***NEXT*** (left side) to increment the number or ***OK*** (right side) to accept the 1. Repeat this same procedure for hours and minutes as shown below.

```
*** SET TIME ***
Set Hour: 16..... [NEXT/OK]
Set Hour: 18..... [NEXT/OK]
Set Min:  16..... [NEXT/OK]
Set Min:  30..... [NEXT/OK]
Start Clock.................[OK]
Ready...
```

When everything is as you want it and you press ***OK***, ***START CLOCK*** is printed. Press ***OK*** (right side) to start the clock. The printer then prints ***Ready*** showing you that it is out of the setup menu and ready to print.

RESET SEQ#

RESET SEQ# is the last setup menu item. This menu item lets you reset the sequence number. This number is the number of print transactions since the last reset.

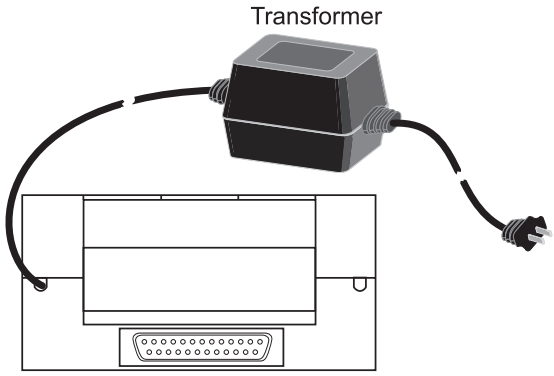
With the printer in the setup menu and with ***RESET SEQ#*** as the last item printed, if you press ***OK*** (right side) the sequence number will be reset to zero and the printer will print ***Ready*** and printer is ready to print.

To skip resetting the sequence number to zero, press ***NEXT*** (left side). ***CONFIGURE*** is printed. Unplug and replug in the printer to return to printing mode. ***Ready*** is printed.

Communication

Model 1250 RS-232 Serial Version

This section shows the cable differences in the models of the 1250 series printer and the control codes and communication protocols.



Pin No.	Signal	DTE Direction	Description
1	Chassis ground	-	Cable shield
2	(TD) Transmitted data	From printer	Printer data output line
3	(RD) Received data	To printer	Printer data input line
7	(SG) Signal	-	Signal ground
11	(CTS) Clear to send	From printer	Signal (equivalent to BUSY) indicating that printer is ready for operation and can receive data.

The rest are not used.

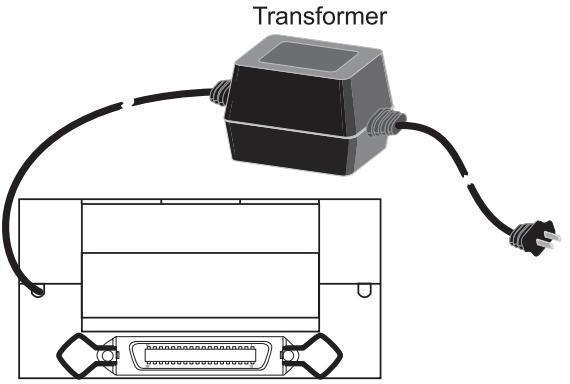
Serial Interface Voltage Levels

Received data:
Mark = OFF = Logic “1” = -25V to -3V
Space = ON = Logic “0” = +25V to +3V

Clear to send:
Busy = OFF = Logic “1” = -9V
Not Busy = ON = Logic “0” = +9V

Transmitted data:
Mark = OFF = Logic “1” = -9V
Space = ON = Logic “0” = +9V

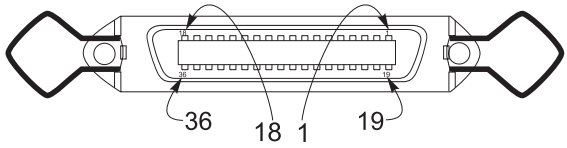
Model 1251
Parallel Version



36-pin Centronics Connector

Pin No.	Signal	Direction	Description
1	Data Strobe	To printer	Samples input data when held low for 10 microseconds.
2 3 4 5 6 7 8 9	Data Bit 1 Data Bit 2 Data Bit 3 Data Bit 4 Data Bit 5 Data Bit 6 Data Bit 7 Data Bit 8	To printer	Indicates input data. High level indicates “1” and low level “0”.
10	Acknowledge	From printer	Indicates character input completion at low level.
11	BUSY	From printer high level.	Indicates data cannot be received at
16-29	0 Volts	-	Twisted pair return (For pins 1 to 11)
12	0 Volts	From printer	High = Out of paper.
13	+5v	From printer	High = printer selected.
32	+5v	From printer	Low level = Error condition.

The rest are not used.



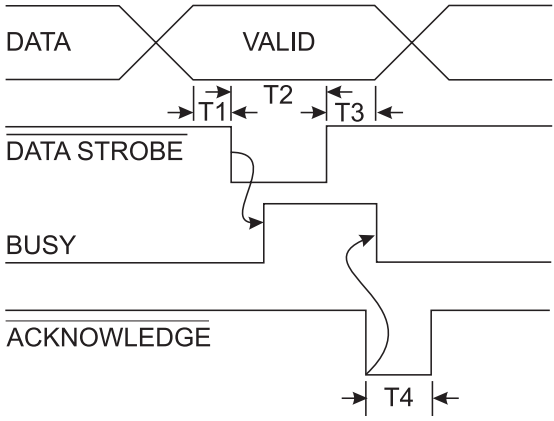
Parallel connector pin arrangement

1. Connectors
   On the printer: 36-pin receptacle, equivalent to 57-40360-12-D56 AMP

   On the cable: 36-pin plug, equivalent to 57-30360 AMP or plug equivalent to 552274-1 AMP; cover equivalent to 552073-1 AMP

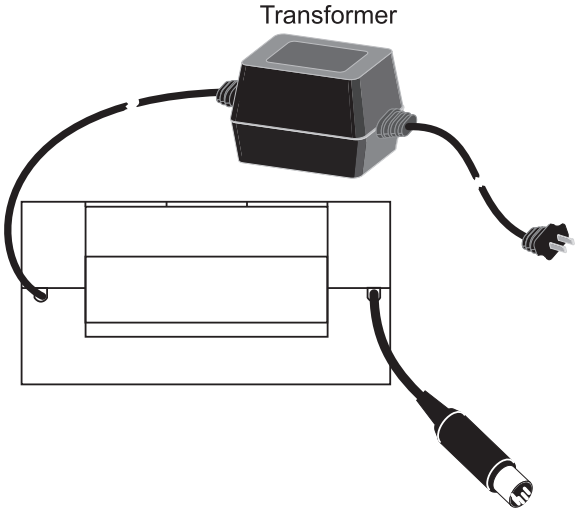
2. Cable
   Use a cable less than 10 feet long. A shielded cable using twisted pair conductions is desirable.

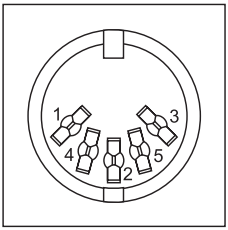
3. Connector Locks
   After engaging the connectors, fasten them with locks.



T1 = 0 minimum
T2 = 0.5 microseconds minimum
T3 = 1 microsecond minimum
T4 = Approx. 6.8 microseconds

Model 1252 Serial TTL Version

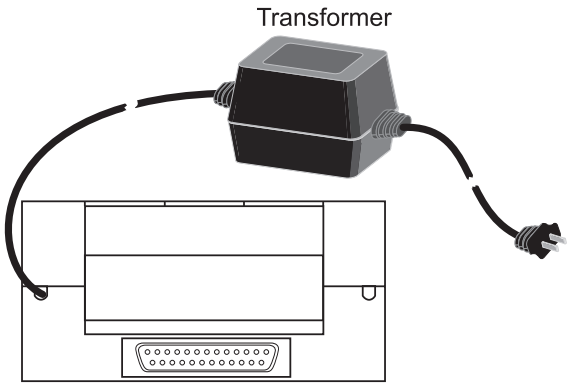




Pin No.	Type
1	BUSY
2	GROUND
3	RCV. DATA
4	XMT DATA
5	NOT USED

Data: TTL low level = Logical “1”
Busy: TTL low level

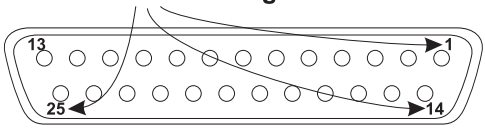
Model 1253
20 mA Current Loop Version



Pin No.	Signal	Direction	Description
1*	Chassis ground	-	Cable shield
23	(RD) Received data(-)	From printer	Printer data return line
25	(RD) Received data(+)	To printer	Printer data input line

*Optional

Serial Connector Pin Arrangement

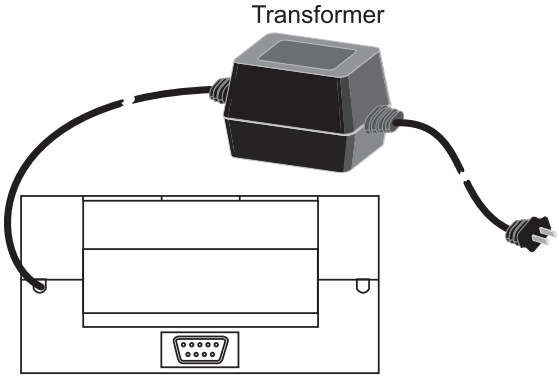


1. Connectors
   On the printer: 25-hole receptacle, equivalent to DB-25S

   On the cable: 25-pin plug, equivalent to DB-25P

2. Cable
   Use cable less than 2500 feet long. A shielded cable using twisted pair conductors is desirable.

Model 1254 RS-485 Serial Version



9-pin DB-M Connector

Pin No.	Signal	DTE Direction	Description
2	TXD -	From printer	Printer data output line
6	TXD +		
3	RXD -	To printer	Printer data input line
8	RXD +		

The rest are not used.

Control Codes

According to the American Standard Code of Information Interchange (ASCII), there are 32 control codes in addition to the codes for the printable characters. (Control codes are sent as data, but the receiving device interprets them as abbreviated ‘’instructions”, communication - status messages, etc.)

The printer recognizes these control codes:

Function	Abbreviation	Code	
		Hex	Decimal
-	NUL	00	0
-	SOH	01	1
Reserved	STX	02	2
Reserved	ETX	03	3
-	EOT	04	4
-	ENQ	05	5
Reserved	ACK	06	6
-	BEL	07	7
Back Space	BS	08	8
-	HT	09	9
Line Feed	LF	0A	10
-	VT	0B	11
-	FF	0C	12
Carriage Return	CR	0D	13
Double Height	SO	0E	14
Double Width	SI	0F	15
Reset Seq. # to 0000	DLE	10	16
Inhibit Line Space	DC1	11	17
User Character	DC3	13	19
Set Time & Date	DC4	14	20
Reserved	NAK	15	21
Get time and date	SYN	16	22
-	ETB	17	23
Stop Reverse Field	CAN	18	24
Reverse Field	EM	19	25
Set Printer Config.	SUB	1A	26
Escape	ESC	1B	27
-	FS	1C	28
24 Column Mode	GS	1D	29
32 Column Mode	RS	1E	30
40 Column Mode	US	1F	31

The printer will ignore all other control codes.

Back Space Code 8

Upon receipt of this code, the printer erases from its buffer the previously received character. This is useful in correcting typing errors for programs that send data both to a video screen and the hardcopy printer. Remember that if you type more characters than the printer can print on a line, the printer will automatically start printing.

Line Feed Code 10

The printer handles this control code in exactly the same manner as carriage return (control code 13) except when a line feed immediately follows a carriage return. The line feed code is ignored if it is immediately preceded by a carriage return. The default setting is 7.4 lines per inch.

Carriage Return Code 13

Whenever a carriage return code is received, the printer will print out the current contents of its buffer, then clear the buffer to get ready for additional data.

Double Height Code 14

This control code tells the printer to switch to the double height character line. The control code can be sent at any time on a line, it need not be the first code received by the printer after a carriage return. You cannot mix normal and double height characters on the same line. Once you select the double height, the printer will remain in that mode until it receives a carriage return or line feed. A line print caused by a buffer full condition will not clear the double height command. This means that the “wrap around” print line will also be double height if the double height command was sent before the line buffer was filled.

Double Width Code 15

This control code tells the printer to switch to double width character printing. The control code should be sent as the first character on a line. If it is received after half the maximum characters per line were sent then the printer will ignore all characters on the last half of the line.

You cannot mix normal and double width characters on the same line. Once you select the double width, the printer will remain in that mode until it receives a carriage return or line feed. A line print caused by a buffer full condition will not clear the double width command. This means that the “wrap around” print line will also be double width if the double width command was sent before the line buffer was filled.

Enlarged Printing Codes 14 and 15

Enlarged printing may be selected by sending both the double height command (code 14) and the double width command (control 15). The control codes may be sent in either order, but because of the double width restrictions, the codes should be sent at the beginning of a line.

Example of Control Codes 14 and 15:

Reset Sequence Number Code 16

When the printer receives this control code it will immediately reset the sequence number to 00000.

Inhibit Line Spacing Code 17

A standard character line is made up of ten dot lines. Eight of these dot lines are used for the printable character and two are used for space between lines. When using character graphics it is desirable to eliminate the two blank lines so the graphic characters connect together. Sending a CHR$(17) (control code 17) anywhere on a line of data will stop the printer from putting space between that line and the next. If a CHR$(17) is not on a print line, the normal space between lines will be printed.

Example:

```
10 B$=CHP$(17)
20 LPRINT "                "B$
30 LPRINT "                "B$
40 LPRINT "                "B$
50 LPRINT "                "B$
60 LPRINT "                "B$
```

Run:

User Programmable Character Code 19

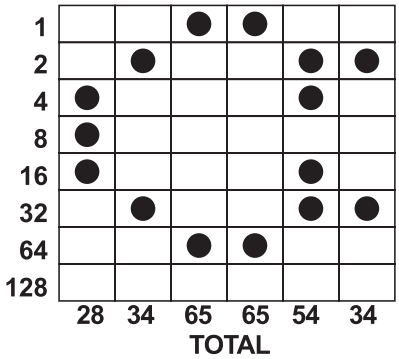
By using CHR$(19) you enter the Custom Character mode. This allows you to design and print your own 6 x 8 character by inputting data. A DATA statement is made of numbers that represent a row of dots which when READ all together, will make up

your character. To design your character, follow the example below. You should notice that each number in the DATA statement corresponds to one row in your character. To design a character, follow these steps:

1. Use quad ruled paper to design your character.
2. Number 8 consecutive rows like this:

   1
   2
   4
   8
   16
   32
   64
   128

3. Now design your character in dot form (see the example below).
4. Add together all the numbers from the column on the left, counting only where you have placed a dot in a row. In our example, the first column has three dots located in rows 4, 8, and 16. Added together they equal 28.
5. Put your final total for each column into a data statement in column order.



The DATA statement in your program will read:

DATA 28, 34, 65, 65, 54, 34

The next step is to tell the printer your newly designed character. To do this you must send a CHR$(19) followed by the six numbers you com

puted above. Here is an example of how this can be done.

```
10 DATA28,34,65,65,54,34
20 LPRINT CHR$(19);
30   FOR I=1 TO 6
40 READ A
50 LPRINT CHR$(A);
60 NEXT I
70 LPRINT "This is the programmed"
80 LPRINT "character "CHR $(126)"."
90 END

This is the programmed character C.
```

After typing RUN, your custom character will be stored in the printer's memory. It will retain this information until the printer is switched off or until you write over the data by defining a different character.

To print your newly designed character, simply send CHR$(126) which corresponds to hexidecimal value 7E.

Set Time and Date Control Code 20

This control code is used when setting the printer's time and date clock. The format used is shown below:

Read Time and Date Control Code 22

This control code is used to read the printer's time and date clock. Time and date format is shown below:

Cancel Reverse Field Control Code 24

Sending this control code will turn OFF the reverse field mode that is selected using control code 25.

Reverse Field Control Code 25

Send this control code to turn ON the reverse field printing mode. This will print white letters on a dark background. Do not print more that three reverse field print lines. Also, do not print more than a few empty spaces in a reverse field. The printer may become overloaded and stop printing.

Selectable Column Width Codes 29, 30, 31

The printer powers up in the column mode last selected by configuration. You can change the column width by sending the appropriate control code from the list below:

Control code 29 - 24 columns
Control code 30 - 32 columns
Control code 31 - 40 columns

Printable Characters

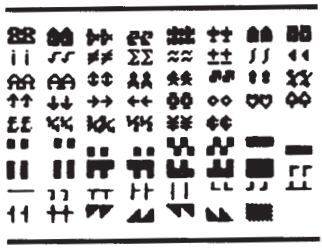
You can send the control code at any point on a line before the buffer becomes filled. You cannot change column widths on the same line.

The Model 125X printer can produce all ASCII characters from hex 20 through hex 7D (decimal 32 through 125). Here's what they look like:

```
    !! "" ## $$ %% && ''
(( )) ** ++ ,, -- .. //
00 11 22 33 44 55 66 77
88 99 :: ;; << == >> ??
@@ AA BB CC DD EE FF GG
HH II JJ KK LL MM NN OO
PP QQ RR SS TT UU VV WW
XX YY ZZ [[ \\ ]] ↑↑ ←←
'' aa bb cc dd ee ff gg
hh ii jj kk ll mm nn oo
pp qq rr ss tt uu vv ww
xx yy zz {{ || }}
```

Note the last two codes of the usual ASCII character set are not supported. Instead, if CHR$(126), which corresponds to hexadecimal 7E, is received by the 125X printer, it will print the character defined in its RAM (Random Access Memory). The section on USER Programmable Character describes how this RAM can be loaded with any 6 x 8 pattern.

The model 125X also has a graphic character set that resides between hexidecimal values 80 and FF (decimal 128 and 255). The symbols used are compatible with Radio Shack® Model 100 portable computer.



For special applications please contact our Customer Service Department for further assistance:

Phone	800-982-6622
	707-527-5555
Fax	800-847-6743
	707-579-0180

Command	**Print formatted data**	
<ESC> 0	HH:MM	24 hour format
<ESC> 1	HH:MM_?M	12 hour format with AM or PM
<ESC> 2	MM/DD/YY	month/day/year
<ESC> 3	DD-MM-YY	day-month-year/numeric month
<ESC> 4	DD-MON-YY	day-month-year with 3 letter abbreviation of the month
<ESC> 5	DOW	day of week abbreviation
<ESC> 6		currently configured format
<ESC> 9	XXXX	current sequence number

Default Table

Below is a table showing the possible values for the Custom and Configuration menu parameters. The values shown in **bold** type are the default settings.

Custom Menu

T/D Format	1 - None 2 - MM/DD/YY_hh:mm_?M **3 - MM/DD/YY hh:mm ?M DOW** 4 - MM/DD/YY hh:mm 5 - MM/DD/YY hh:mm DOW 6 - DD-MM-YY hh:mm ?M 7 - DD-MM-YY hh:mm ?M DOW 8 - DD-MM-YY hh:mm 9 - DD-MM-YY hh:mm DOW 10 - DD-MON-YY hh:mm ?M 11 - DD-MON-YY hh:mm ?M DOW 12 - DD-MON-YY hh:mm 13 - DD-MON-YY hh:mm DOW
Auto T&D	**1 - NO (no print after CR)** 2 - YES (print after CR)
Auto SEQ#	**1 - NO (no print after CR)** 2 - YES (print after CR)
Zero	**1 - Ø Zero with slash** 2 - 0 Zero without slash
Pound	**1 - # U.S. pound symbol** 2 - £ British pound sterling symbol
Underscore	**1 - _ Underscore** 2 - → Left arrow
Busy Invert	**1 - Non-inverted busy (CTS)** 2 - Inverted busy
Online/Offline	**1 - switch function enabled** 2 - switch function disabled
Ext Ch Set	**1 - NO (no extended char. set)** 2 - YES
Print Ready	**1 - Print "Ready" message** 2 - Don't print "Ready" message

Configuration Menu

Baud	1 - 300 2 - 600 **3 - 1200** 4 - 2400 5 - 4800 6 - 9600 7 - 19200
Data Bits	1 - 7 **2 - 8**
Parity	**1 - ODD (none if data bits = 8)** 2 - EVEN **(none if data bits = 8)**
Stop Bits	**1 - 1** 2 - 2
Handshake	1 - None 2 - BUSY-LINE (serial only) **3 - BUSY-BUFF (serial only)** 4 - XON/XOFF-LINE (serial only) 5 - XON/XOFF-BUFF (serial only)
Columns	1 - 24 **2 - 32** 3 - 40
Invert	**1 - No (non-inverted printing)** 2 - YES (inverted printing)
Font Type	1 - 5x8 font **2 - 5x7 font** 3 - 5x5 font
Magnification	**1 - No magnification** 2 - Double width 3 - Double height 4 - Double width, double height

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