Bryce

World Leader In Address Printers
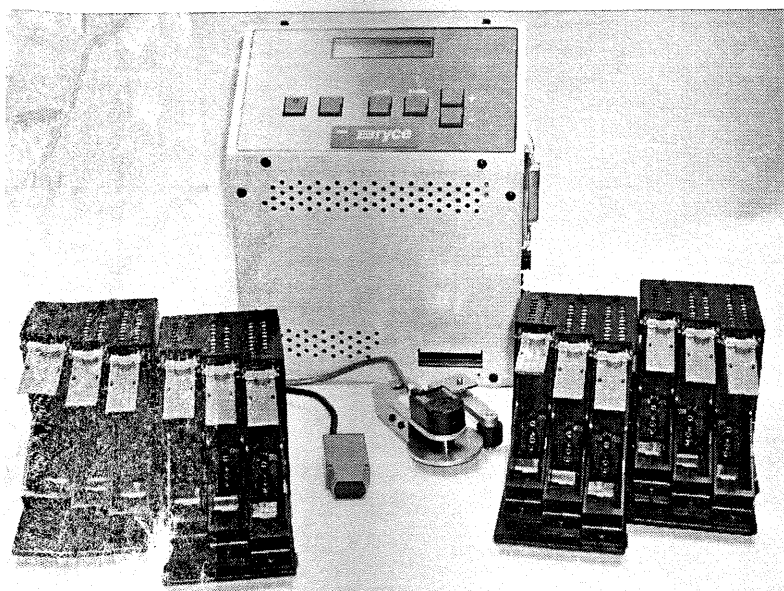
OEM
Industrial Printing System

Users Manual

ONAM

WARNING

WARNING: HIGH VOLTAGES ARE PRESENT BEHIND THE COVERS AND IN THE CONTROL BOX ASSEMBLY.

There are no user serviceable parts inside. The electrical and/or sensitive parts may only be serviced by an authorized Service Representative.

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

Caution

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

VORSICHT

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom
Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach
Angaben des Herstellers.

ADVARSEL

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage tilleverandøren.

Notice

The information in this document is subject to change without notice. No warranty of any kind is made with regard to the material contained herein. The manufacturer will not be liable for incidental or consequential damages in connection with the furnishing, performance or use of this material.

This manual is for the person who is new to the Bryce OEM Address Printer and needs step by step instructions to setup and operate the printer.

The appendix at the end of the manual has information for those who are familiar with the OEM printer and simply want a quick reference or want more specific technical information on the OEM printer.

Who is this manual for?

Section 1 - Unpacking
A list of the components that came with your new printer.

Section 2 – Setting up the Printer
Describes the basics of how to setup and install the components of the printer for the first time.

Section 3 – Trying out the Printer
Step by step instructions to operate the address printer and some adjustments to maximize the performance of the printer.

Section 4 –Printer Tips
Additional adjustments and instructions to fine tune the printer.

Section 5 – Adjusting the Sensor
Step by step instructions to adjust the sensor and some considerations when setting up the sensor.

Section 6 – Printer Menu System
Explains each of the menu options of the address printer.

Section 7- Troubleshooting and Diagnostics
A list of possible problems you may encounter when operating the printer and their solutions.

Section 8 – Cleaning and Maintaining the Printer
General maintenance steps to keep the printer clean and functioning properly.

Appendices
The appendices include a quick reference table for the OEM menus, a listing of the PCL commands the printer recognizes, a hex chart to help work through a HEX dump, and references of setting up the most popular software to work with the printer. The final section has a list of supplies available for your printer.

As you remove the boxes contents, check the pieces against
the following list.
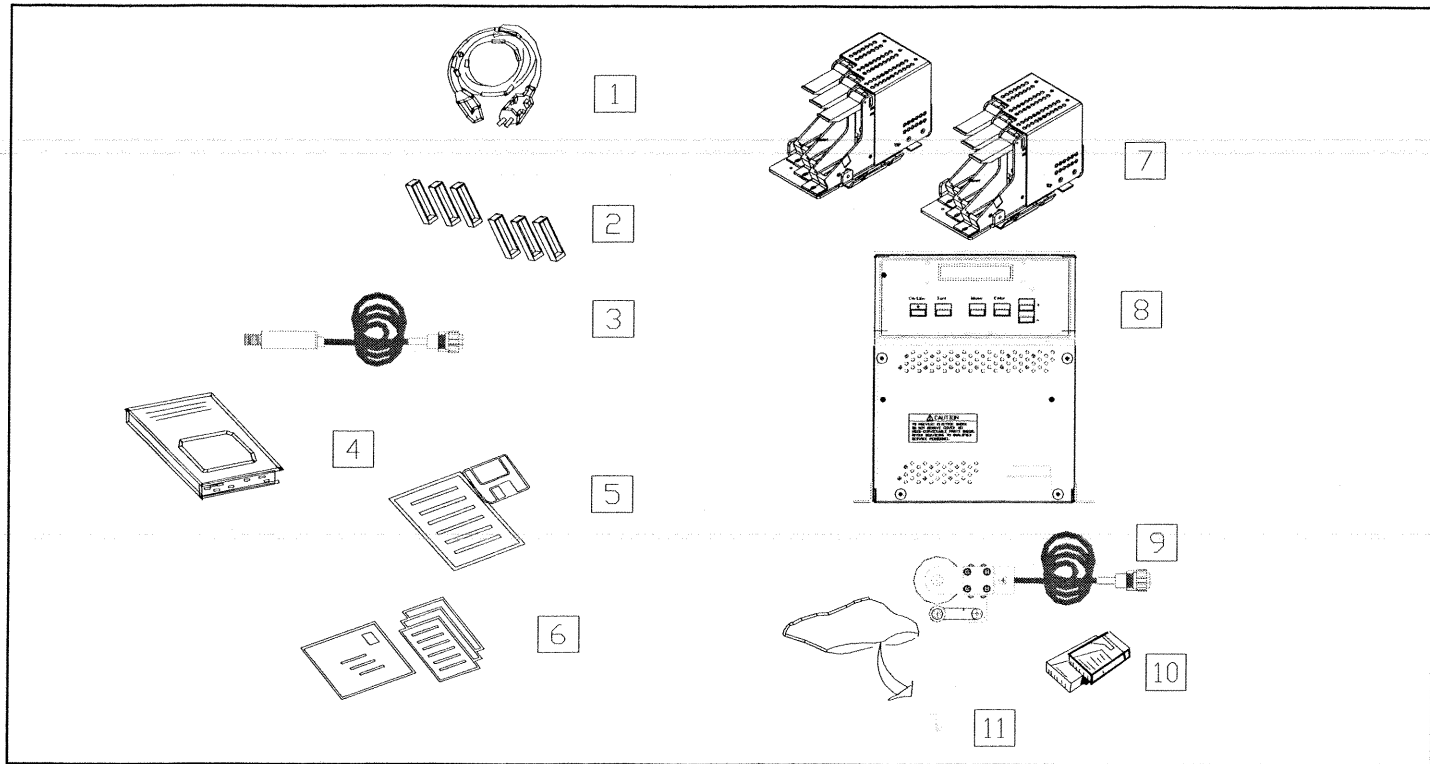
☑CHECK LIST

___ 1. Line Cord

___ 2. Cartridge Capping Station (s)

___ 3. Cable Assembly, Photo Sensor

___ 4. Users Manual

___ 5. Windows 95 & 98 / NT / 2000 Driver Manuals
     & 3 ½ Driver Disks

___ 6. Warranty Information Sheet and Card

___ 7. Head Print Assembly (ies)

___ 8. Control Box

___ 9. Encoder Assembly, OEM

___ 10. Ink Cartridge (s)

___ 11. Spring Torsion, LH

The following environmental considerations must be kept in mind when selecting a location for the Industrial Printer. Doing otherwise may affect the operation and performance of the Industrial Printer.

Choosing a Good Location for the Printer

1. Place the printer close enough to the computer for the parallel or serial cable to reach. Note: AB switches are not recommended for operation with this printer.

2. Place the printer on a flat, stable surface.

3. Use a grounded, dedicated outlet for the printer only. **Note**: Do not use an adapter plug.

4. Avoid locations near direct sunlight, excessive heat, high humidity, moisture, or dust.

5. Keep the entire system away from large motors or other appliances that might disturb the power supply or create potential interference.

Before starting to build the OEM there are some issues that need to be addressed for the OEM to function with your machinery.
Answer the following questions:

Before you Start

o What is the best direction to mount the Control Box; mount standing up or mount laying down?
o What direction is the media going to traveling under the 3 Head Print Assemblies: From Left to Right or Right to Left?
o Where can the Encoder Assembly be installed without being in the path of the media?
o Where is the path the media will travel? Will the media interrupt the beam of the Sensor Assembly?
o What color is the media? Is it a dark color or light color?
o Will the media reflect the sensor beam back? Will the background the sensor is aimed at reflect the sensor beam back?
o Does the media have printing on it? Light and dark areas?

Use the following step by step directions to help in setting up the printer.

It is assumed that there is a location and means of mounting the Control Box, that there is a bracket for mounting the Sensor Assembly in the path of the media, the Encoder Assembly will get mounted onto the transport belt, and the two 3 Head Print Assemblies are going to get mounted on a set of adjustable brackets.

The first question is how is the Control Box going to be mounted? Will the Control Box be standing up or will it be laying down?

Setting Up the Control Box

The first step is how to change the Brackets on the Control Box. Do not be alarmed that the LCD display and the keys are upside down. Later in connecting the 3 Head Print Assemblies the controls will get mounted correctly.

Before getting started you will need a medium Phillips head screwdriver for mounting the OEM and assembling the printer.

Bracket   Bracket

Brackets on Control Box
as mounted at factory.

The Control Box has four holes on each side for installing the brackets. The Control Box already has the brackets installed at the factory so the Control Box will stand upright.

1. To change the Brackets use the Phillips head screwdriver to remove the two screws from each of the brackets.

2. Reinstall the brackets on both sides of the Control Box using the two screws.

Screws

Brackets

Once the brackets are installed onto the Control Box then secure the Control Box in place by using screws or clamps.

Bracket installed on
side of Control Box.
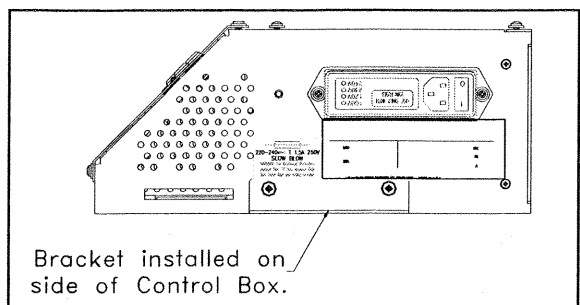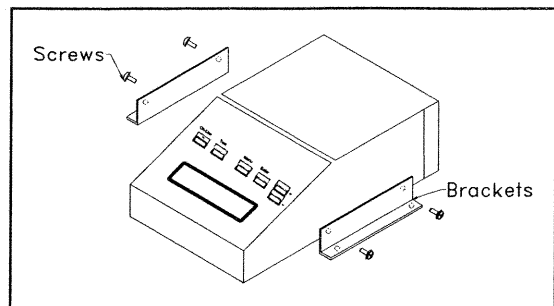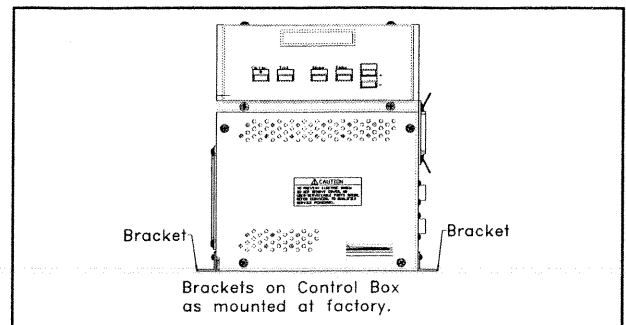
Mount the Sensor above the path of the media. The sensor is a reflective sensor and must be adjusted to recognize the difference between the media and the transport belt or background surface. For optimum performance of the sensor, keep the sensor as close to the reflective surface of the media or background without it getting bumped or damaged.

Another consideration in determining where the sensor is going to be placed is the distance from the first and last Banks of 3 Head Print Assemblies. Use the illustration below for an example. The furthest distance the sensor can be from the last Bank of 3 Head Print Assemblies is thirty-six inches. The closest distance the sensor can be placed is one half inch from the first Bank of 3 Head Print Assemblies.

Installing the Sensor Assembly

Sensor Assembly

Threaded Cap

Note: Begin measuring from the middle of the Print Cartridge to the Sensor Assembly.
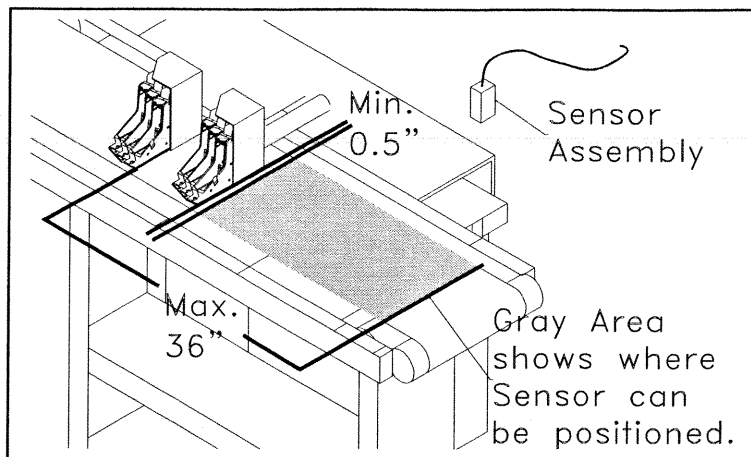
Included with the Sensor is a bag of screws and nuts. The parts in the bag have been included to help you mount the sensor.

Once the sensor is set into position then plug the sensor into the port on the side of the Control Box. Turn the threaded cap to secure the sensor connector in place.

Make certain the path the media will travel is beneath the sensor or in the path of the sensor beam. Use the illustration to the right for an example.

The Encoder Assembly must be installed where it will keep track of the speed of the media. Mount the Encoder Assembly with the transport belt trapped between the Large Roller and the small roller on the swing arm.

A bag of parts are included in the accessories to help in mounting the Encoder Assembly and in case the Encoder Assembly swing arm has to be reversed.

When choosing a place for the Encoder Assembly you must find an area that is out of the path of moving media or other moving objects. Place it in an Encoder Safe area so it will not get bumped or hit by the media. The illustration shown below is an example of an Encoder Safe Area.
Open the swing arm and place the transport belt between both rollers. Mount the Encoder Assembly with the rollers placed onto the belt. Once the Encoder Assembly is set into position then plug the encoder into the port on the side of the Control Box. Turn the threaded cap to secure the encoder connector in place.

The Encoder is able to be mounted to travel to the right or to travel to the left. To reverse the direction of the Swing Arm on the assembly it may be removed and reinstalled using the extra Torsion Spring.

A small Phillips head screwdriver, a 1/8 Allen driver and the bag of components are needed to change the assembly.

Installing the Encoder Assembly

Example of possible locations for the Encoder Assembly.

1. Use a 1/8 Allen driver to remove the Shoulder Bolt and Swing Arm from the "L" shaped bracket.

2. Remove the two screws securing the "L" shaped bracket to the assembly.

3. Flip the assembly over and remove the two screws from the other side that secures the Felt Bracket.
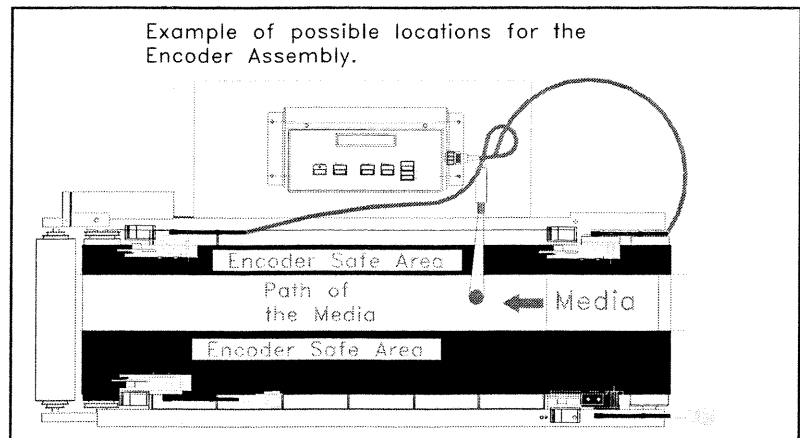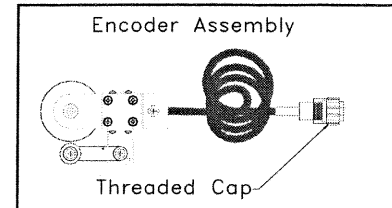
Reversing the Encoder Assembly
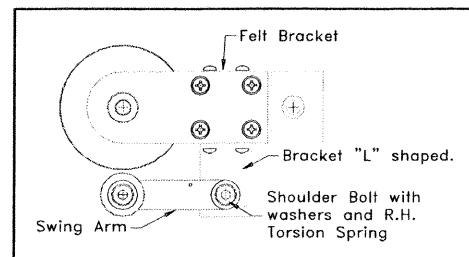
4. Reinstall the Felt Bracket on the opposite side.

5. Mount the bracket for the Swing Arm onto the other side of the assembly.

6. Pull the Torsion Spring, the Shoulder Bolt and washers from the Swing Arm.

Felt Bracket

Encoder Shown without
Connector of ease of
illustration.

Bracket "L" Shaped

Rear View

7. Reinstall the Shoulder Bolt and washers through the other side of the Swing Arm.

8. Install the other Torsion Spring from the plastic bag into the hole in the Swing Arm and onto the Shoulder Bolt.

9. Start screwing only one or two threads of the Shoulder bolt into the Encoder Assembly. Do not tighten completely.

Encoder Shown without
Connector for ease of
illustration.

Bracket "L" Shaped

Remove Swing Arm and
install other Torsion Spring.

Side View   **Rear View**

10. Set the roller on the Swing arm onto the large roller.

11. Twist the free end of the spring over and push it into the hole in the bracket.

12. Finish securing the Shoulder Bolt in place. The Encoder Assembly is now ready to be mounted onto the transport belt.

13. Mount the Encoder Assembly onto the Transport Belt.

14. Once the Encoder Assembly is set into position then plug the encoder into the port on the side of the Control Box.

15. Turn the threaded cap to secure the encoder connector in place.

Shown upside down for ease of
illustration.

Side View   **Rear View**
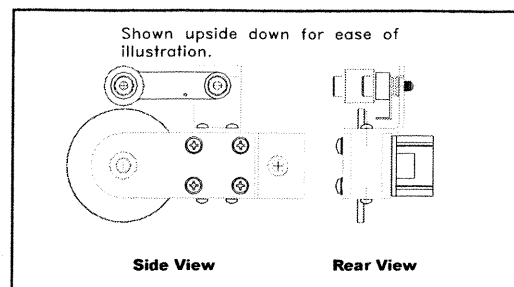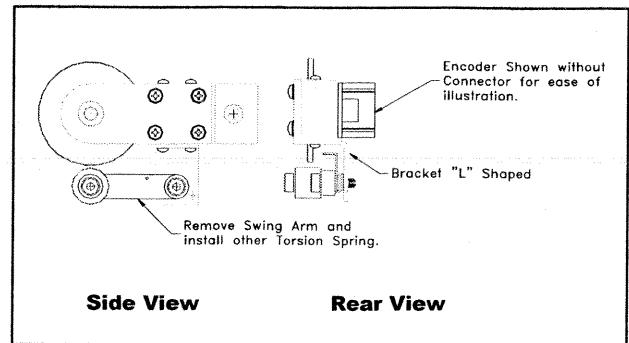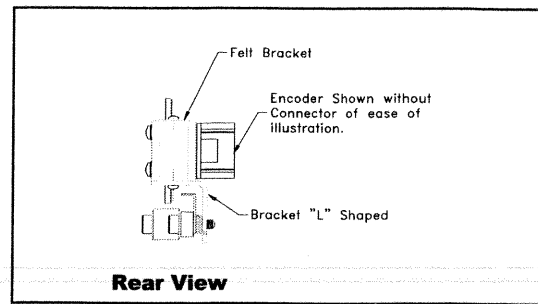
Once the Control Box, the Encoder Assembly and the Sensor Assembly are in position then install the 3 Head Print Assemblies.

Locate the two 3 Head Print Assembly over the area where the media will travel. Make certain the 3 Head Print Assemblies will be mounted perpendicular to the path of the media. Use the two threaded holes on the back for mounting each of the 3 Head Print Assemblies. Use the same steps when adding additional Head Print Assemblies.

Recommendation: When positioning the Head Print Assemblies think of Bank A as the first six lines of a page and Bank B as lines 7 through 12 on a page. Continue in this fashion when adding more 3 Head Print Assemblies.

When placing the 3 Head Print Assemblies always stagger the next one out and up toward the direction of the sensor. Use the wide wiper in the center of the assemblies as a reference where the nozzles will be printing. Continue in this manner when installing any additional 3 Head Print Assemblies. Refer to the illustration on the right when placing and labeling the 3 Head Print Assemblies.

Make certain the wipers on the 3 Head Print Assemblies are angled up on the side that the media will be coming from. If the wipers are angled up where the media is exiting then you need to reverse the direction of the wipers. See section "Reversing the Wipers".

One of the 3 Head Print Assemblies has wipers that extend up higher than the others. Place this 3 Head Print Assembly toward the front where the media is coming from.

Installing the 3 Head Print Assemblies

Ink Low
LED Indicator

3 Head Print Assemblies

Path of the Media

Media

Bank A

Bank B

Optional Bank C

Optional Bank D

Wipers

Media

3 Head Print Assembly

Connecting the Head Print Assemblies to the Control Box.

The last peripherals to connect to the Control Box are the 3 Head Print Assemblies. Use the following steps to connect each of the 3 Head Print Assemblies.

Warning: Always wear anti static wrist straps whenever working near or handling the Processor Board. Static discharge will damage IC Chips.

1. Remove the four screws from the Control Panel. **Danger**: Disconnect the power cord from the printer.

2. Lift the Control Panel up and disconnect the cable from the panel.

3. Remove the four screws from the Cover. Lift the Cover from the Control Box.

4. Locate the four slots on top right corner of the processor board. Connect the Head Print Assembly that is located the farthest from the Control Box into the slot marked Print Head 1 (Refer to this 3 Head Print Assembly as Bank A). Connect the next furthest from the Control Box into the next slot up. The slot is marked as Print Head 2 (Refer to this 3 Head Print Assembly as Bank B). Continue in this fashion to add more 3 Head Print Assemblies.

5. Locked near the Transformer is a black metal bracket with a Strain Relief Bar screwed down. Remove the screw securing the Strain Relief Bar and lift and unhook the bar from the bracket.

6. Lay all the cables from the Head Print Assemblies down. **Caution**: Do not fold or crimp the ribbon cables. Damage may occur to the cables

Warning: Disconnect the power from the Control Box before installation of the 3 Head Print Assemblies.

Screws

Screws

Screws to Cover

Control Panel

Cover

Remove the Control Panel first on the Control Box.

Bank D
Bank C
Bank B
Bank A

Screw
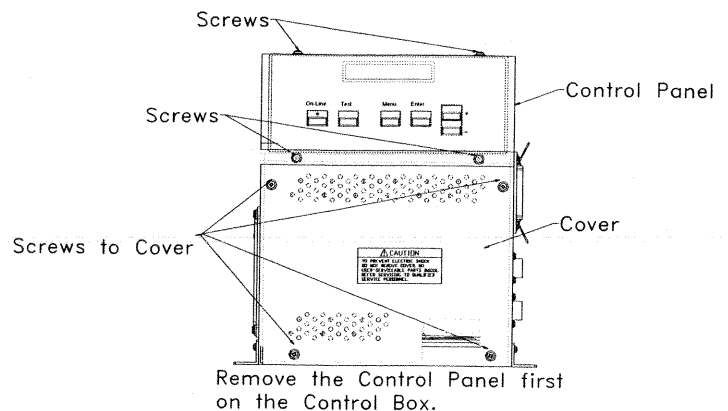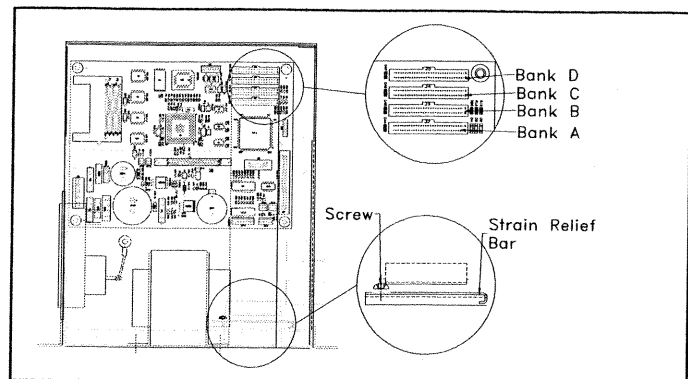
Strain Relief Bar

when folded or crimped which may result in poor or
lost print.

7. Hook the Strain Relief Bar into the bracket.

8. Lay the bar over the cables and secure with the screw.

9. Reinstall the cover onto the Control Box using the four
    screws.

10. Reconnect the cable to the Control Panel.

11. Reinstall the Control Panel onto the Control Box using
    the four screws. Orient the Control Panel for the
    Control Box laying down or standing upright.

Up to this point the setup for the printer is to run it in a Right
to Left direction. The following steps are the required changes
to run the printer in a Left to Right direction.

Running the Printer Left to Right

1. Setup the Control Box. (See Setting Up the Control Box
    for more details).

Set at factory.   **Optional Setup.**
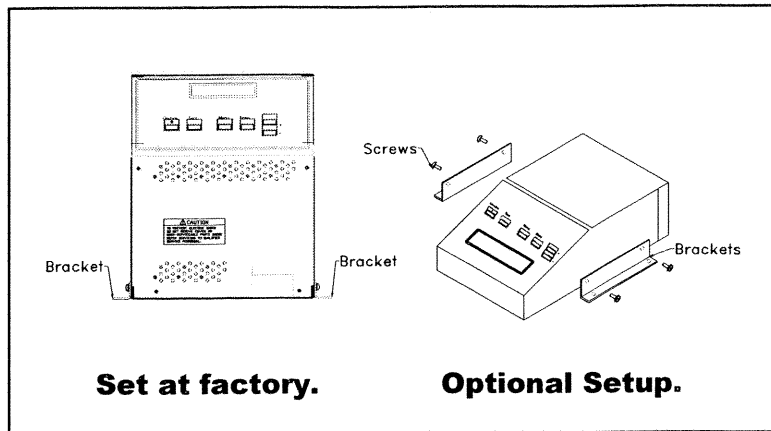
2. Install the Sensor Assembly. (See Installing the Sensor Assembly for more details)
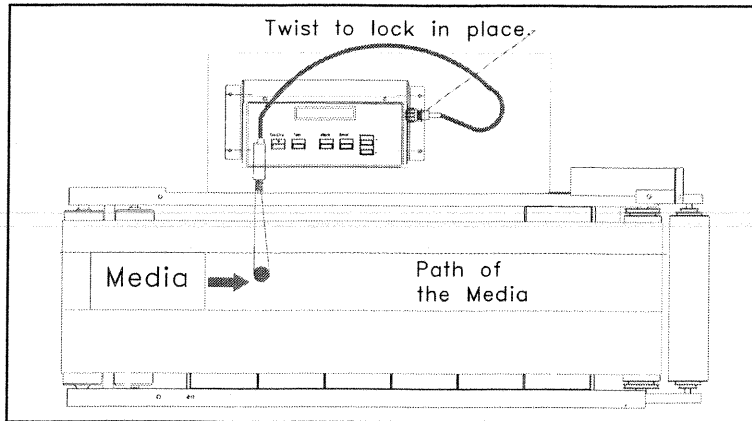
3. Install the Encoder Assembly. (See Installing the Encoder Assembly for more details).
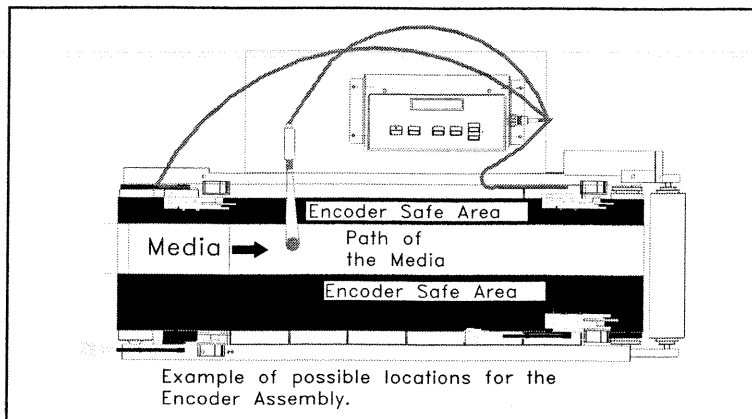
4. Reverse the Wipers to run Left to Right.

Reverse the direction of the wipers on each of the 3 Head Print Assemblies when running the media in a Left to Right direction. The angled end of the wipers must be on the same side of the 3 Head Print Assemblies as where the media is coming from. Place the angled end of the wipers on the same side of the Head Print Assembly that the media is coming from. Use the following procedures to reverse the wipers.

Use a 1/16 Allen driver to change the assembly wipers on the 3 Head Print Assembly. Change each of the 3 Head Print Assemblies wipers.

Reversing the Wipers
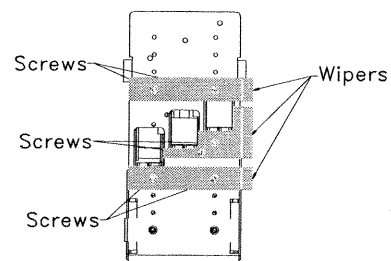
**Bottom View
Set for Right to Left**

1. Use an Allen driver to remove the screws from the three wipers.

2. Flip the 3 Head Print Assembly onto the other side.

3. Reinstall the wipers with the angled end facing up.
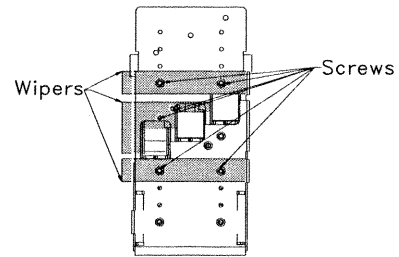
Bottom View
Set for Left to Right
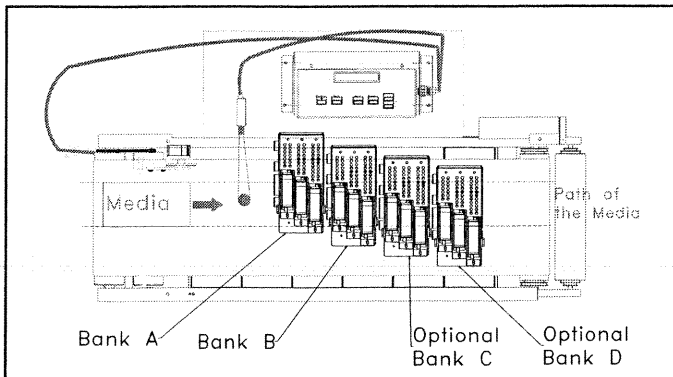
4. Install the 3 Head Print Assemblies.

5. Connect the Head Print Assemblies to the Control Box.

Danger!! Serious Electrical Shock May Occur from exposed wires if power cord is connected to the printer.

The last peripherals to connect to the Control Box are the 3 Head Print Assemblies. Use the following steps to connect each of the 3 Head Print Assemblies.

1. Remove the four screws from the Control Panel.
   Danger: Disconnect the power cord from the printer.

Warning: Always wear anti static wrist straps whenever working near or handling the Processor Board. Static discharge will damage IC Chips.

2. Lift the Control Panel up
   and disconnect the cable
   from the panel.

3. Remove the four screws
   from the Cover. Lift the
   Cover from the Control
   Box.

4. Locate the four slots on top
   right corner of the
   processor board. Connect
   the Head Print Assembly that is located the farthest
   from the Control Box into the slot marked Print Head 1
   (Refer to this 3 Head Print Assembly as Bank A).
   Connect the next furthest from the Control Box into
   the next slot up. The slot is marked as Print Head 2
   (Refer to this 3 Head Print
   Assembly as Bank B). Continue in
   this fashion to add more 3 Head
   Print Assemblies.

5. Locked near the Transformer is a
   black metal bracket with a Strain
   Relief Bar screwed down. Remove
   the screw securing the Strain
   Relief Bar and lift and unhook
   from the bracket.
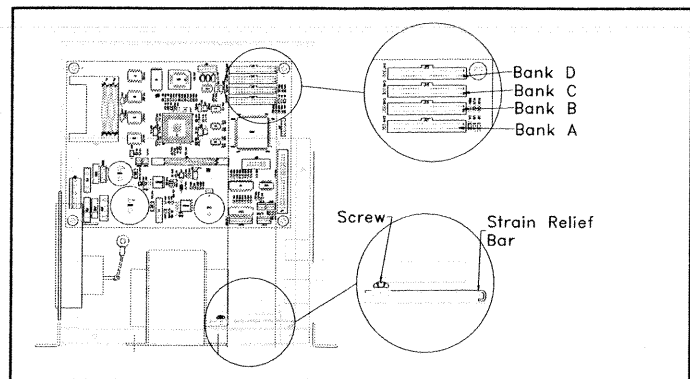
6. Lay all the cables from the Head Print Assemblies
   down. **Caution**: Do not fold or crimp the ribbon
   cables. Damage may occur to the cables when folded
   or crimped which may result in poor or lost print from
   the OEM.

Warning: Disconnect the power
from the Control Box before
installation of the 3 Head Print
Assemblies.

7. To print on the media moving in a Left to Right direction the settings of the DIP Switches on the processor board must be changed. The DIP Switches are located toward the lower Right corner of the processor board. The DIP Switches are all set to ON at the factory for print Right to Left. Set switch #1 to OFF when the transport system is going to move the media from Left to Right.

Left to Right DIP Switch Setting

8. Hook the Strain Relief Bar into the bracket.

9. Lay the bar over the cables and secure with the screw.

10. Reinstall the cover onto the Control Box using the four screws.
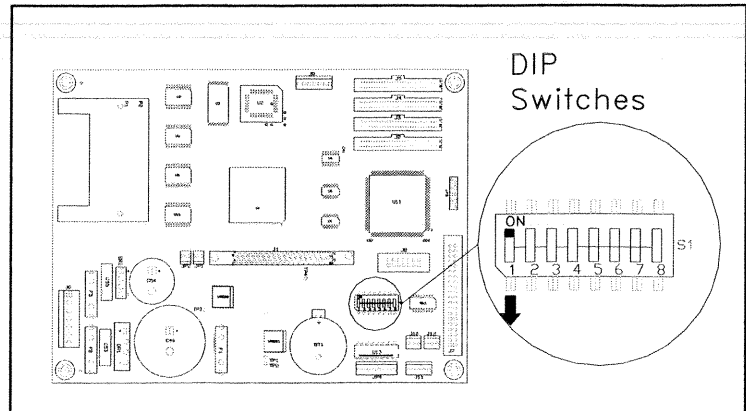
11. Reconnect the cable to the Control Panel.

12. Reinstall the Control Panel onto the Control Box using the four screws. Orient the Control Panel for the Control Box laying down or standing upright.

The power cord is plugged in, the printer is connected to the computer. Now you can turn the power on.

Power On

- Press on the printers' ON/OFF (I/O) power switch. The switch is located on the side of the printer next to the line cord receptacle. Press on the symbol "I" (ON) position. The printer LCD menu will display the initializing phrase PRINTER STARTING 1 then PRINTER STARTING 2 and printer will automatically go ON LINE.
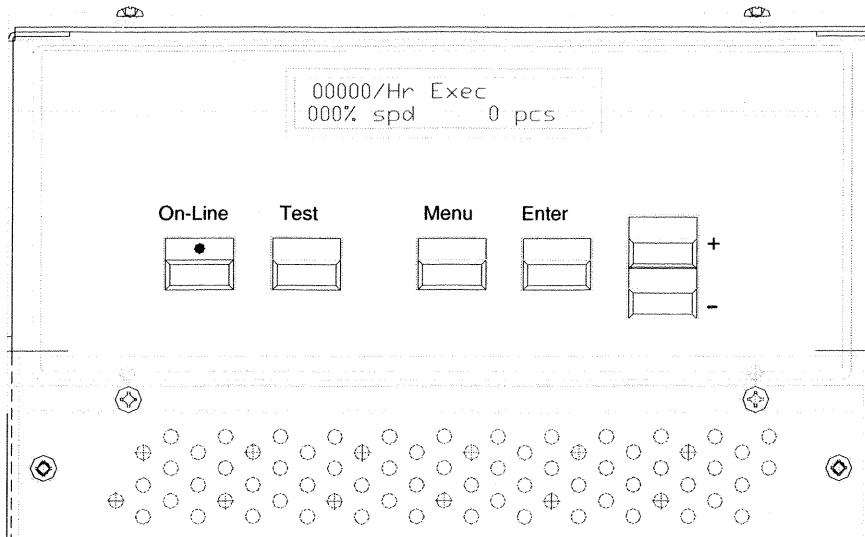
The Industrial Printer uses one, two, three and up to twelve black Print Cartridges for printing. To install the cartridge, do the following:

- Verify the LCD on the top of the ON LINE button is lit. The LCD is either unlit for OFF LINE or lit for ON LINE.

CAUTION

The ink in the print cartridge may be harmful if swallowed. Keep new and used cartridges out of reach of children. Discard empty print cartridges in the proper manner.

Installing a Print Cartridge

1. Remove the Cartridge from the shipping container by peeling top cover off. Be careful not to touch the copper ribbon.

Note: The OEM was designed to use a **HP 51645 style print cartridge or HP 51645A Ink Reservoir System**.
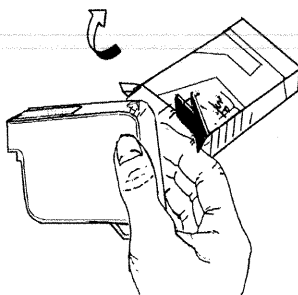
2. Gently remove both pieces of tape covering the ink nozzles on the print cartridge. Be careful not to touch the copper nozzles.

TAPE
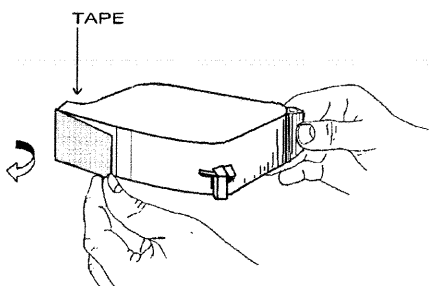
3. Raise the latch all the way up on the Head Print Assembly. Hold cartridge from the notched handle on top of the cartridge. Gently insert cartridge down at approximately a 45 degree angle into the cradle.
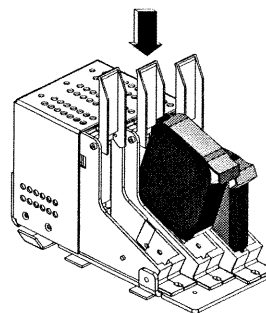
4. Push down on the ink cartridge until it is seated on the bottom of the Head Print Assembly. Push and rock the ink cartridge forward to stand ink cartridge up. Press down blue latch to lock ink cartridge in place.

Removing the Print Cartridge
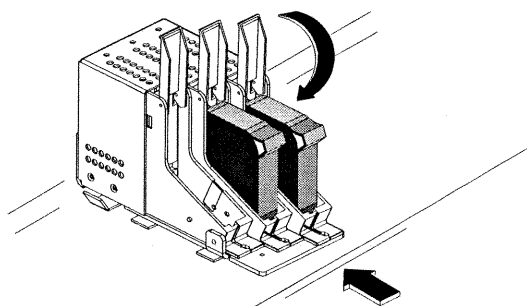
When the Ink Low LED indicator is blinking the Print Cartridges are nearly empty and have to be changed soon. Use the following steps to remove used or damaged Print Cartridges.

1. Grasp the latch on top. Lift up on the latch. The cartridge will "pop" loose.
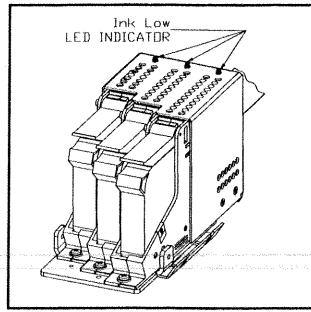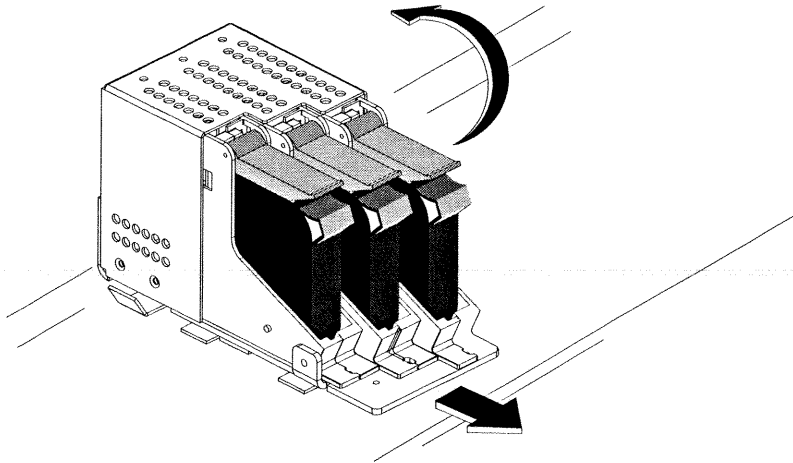
2. Grasp the handle on the ink cartridge and lift the print cartridge out of the cradle.
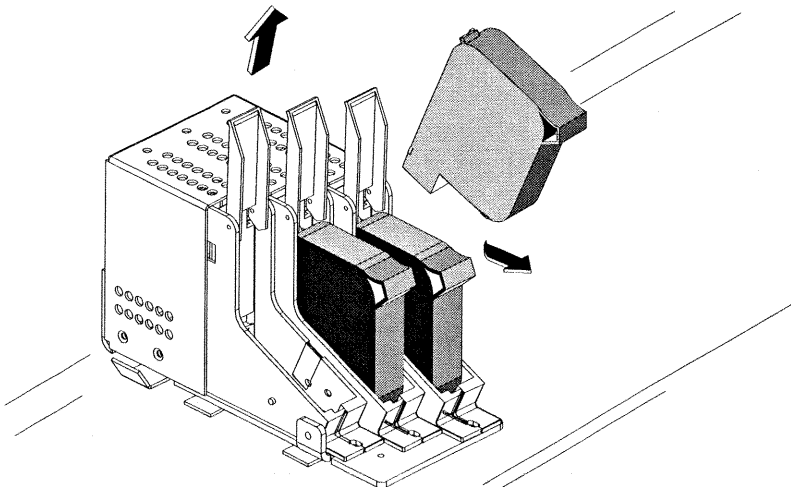
Note: Reset the Ink Count in the Main Menu after replacing a Ink Cartridge.

Recheck that all the necessary components of the printer are installed and fastened.

- Is the Sensor and Encoder Assembly securely plugged in?
- Are the 3 Head Print Assemblies installed and locked in place?
- Does the printer have at least three black print cartridges installed?
- Is the printer connected to the computer?

Preparing the Media

Now that all the parts of the printer are installed the printer needs to be adjusted to work with the media. To avoid problems of misfeeding and jams the media must also be made ready for the printer.

Use the following steps to make the media ready for printing:

1. Take a manageable pile of media and while holding them (as shown below in reference A), "fan" all sides of the media to make sure that each piece of media is free from one another.

2. Square the pile against the tabletop, assuring a square pile on all sides. (Reference following illustration) This will also allow media to settle toward the bottom of a stuffed envelope making the media a consistent shape.
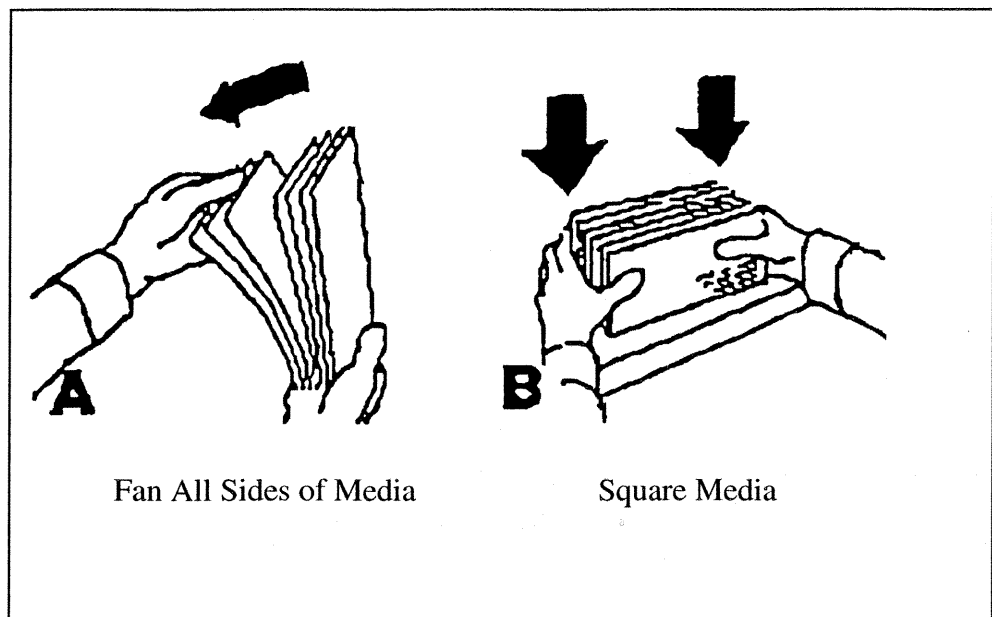
Fan All Sides of Media   Square Media

The printer is designed to print on a variety of media with various finishes and coatings. The sharpness of the print quality will vary with different media types, depending on how absorbent the media is, as well as other qualities. The best results can be achieved using white wove bonded stock. The printing quality will be less sharp on tyvek, recycled and glossy media.

To start a print job the gap between pieces should be set according to several variables. The first variable is the print quality that is chosen. The higher the print quality, the more ink that gets sprayed which requires lowering the transport belt speed.

Note: For the best quality of print with a standard print cartridge keep the transport belt running at the **100% spd** mark.

The second variable is the amount of data; graphics, records, return address, etc., which the printer is required to print on each piece of media. The more that has to be printed on each piece requires a larger gap before the printer is ready to receive the next piece.

Example: You have a label setup that is capable of sending 6 lines of data. Some records only have enough data to utilize 3 or 4 lines of the label, while others will utilize all 6 of the lines available. The feed rate should be determined by running a test file containing all 6 line records to ensure that no early feed errors are encountered.

Perform the subsequent steps for running the OEM using #10 envelopes. In the example a generic conveyer system with a variable speed control and an adjustable media feeding system are used.

1. Turn on the OEM printer.

2. Start the conveyer. Increase the speed of the transport belt while watching the display on the Control Box. Increase the speed until **100% spd** is shown on the LCD display.

3. Put the prepared #10 envelopes into the feeder.
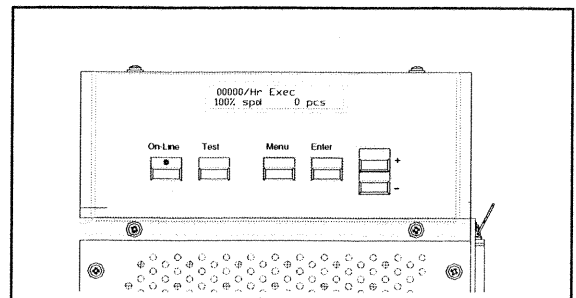
Setting the Proper Feeding Gap

Setup with #10 Envelopes

The printer is designed to print on a variety of media with various finishes and coatings. The sharpness of the print quality will vary with different media types, depending on how absorbent the media is, as well as other qualities. The best results can be achieved using white wove bonded stock. The printing quality will be less sharp on tyvek, recycled and glossy media.

Setting the Proper Feeding Gap

To start a print job the gap between pieces should be set according to several variables. The first variable is the print quality that is chosen. The higher the print quality, the more ink that gets sprayed which requires lowering the transport belt speed.

Note: For the best quality of print with a standard print cartridge keep the transport belt running at the **100% spd** mark.

The second variable is the amount of data; graphics, records, return address, etc., which the printer is required to print on each piece of media. The more that has to be printed on each piece requires a larger gap before the printer is ready to receive the next piece.

Example: You have a label setup that is capable of sending 6 lines of data. Some records only have enough data to utilize 3 or 4 lines of the label, while others will utilize all 6 of the lines available. The feed rate should be determined by running a test file containing all 6 line records to ensure that no early feed errors are encountered.

Setup with #10 Envelopes

Perform the subsequent steps for running the OEM using #10 envelopes. In the example a generic conveyer system with a variable speed control and an adjustable media feeding system are used.

1. Turn on the OEM printer.

2. Start the conveyer. Increase the speed of the transport belt while watching the display on the Control Box. Increase the speed until **100% spd** is shown on the LCD display.

3. Put the prepared #10 envelopes into the feeder.

4. Send several copies of the test record to the OEM. Start by sending ten or more copies of the test record to the OEM when setting the gap. **Note**: Use the record with the most lines as the test record.

5. Start feeding envelopes to the conveyer. Starting with a gap of a quarter of an envelope.

6. Check the display on the OEM for any Early Feed Error messages.

7. If no errors are seen and every piece is printed on then the gap is good. Start decreasing the gap to increase the throughput. Stop as soon as Early Feed Errors are detected.

8. If Early Feed Errors are detected then start increasing the gap between pieces. Keep increasing the gap until every piece is printed on and no errors are detected.

9. The OEM is now ready to run a job of #10 envelopes.
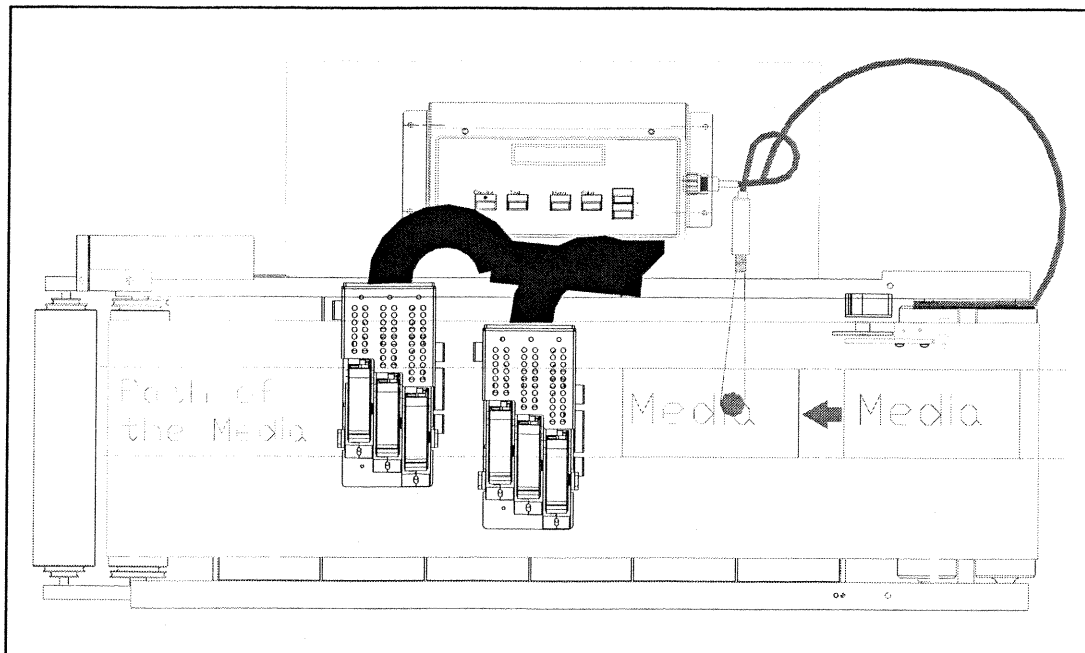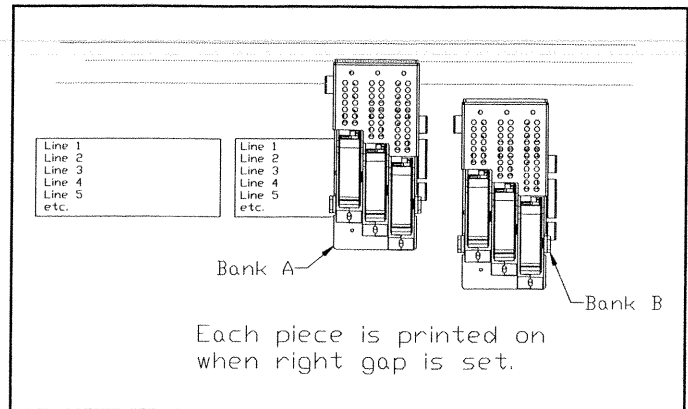
Different sizes and types of media call for unique settings of the Head Print Assemblies. To accommodate different sizes of media the Head Print Assemblies have to be raised or lowered until they touch the top of the media. Enough pressure has to be applied by the metal wipers underneath the Head Print Assemblies to keep the media from moving around beneath the Print Cartridges while printing.

Finding the Right Height Adjustment for Media Thickness

1. While the OEM printer is printing, lower the Head Print Assemblies until the wiper under the Head Print Assemblies just touches the media. When the printed test message smudges, adjust the Head Print Assemblies up to get the desired print quality. Reference figure to the right.

Lower towards media.
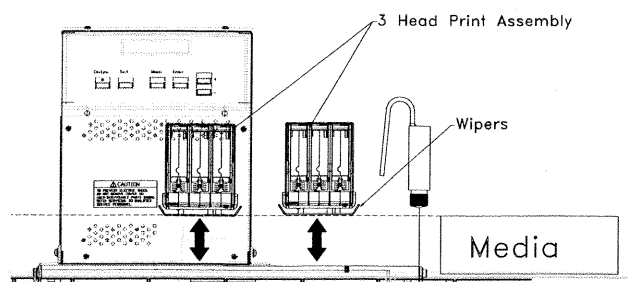
Set to top edge of Media
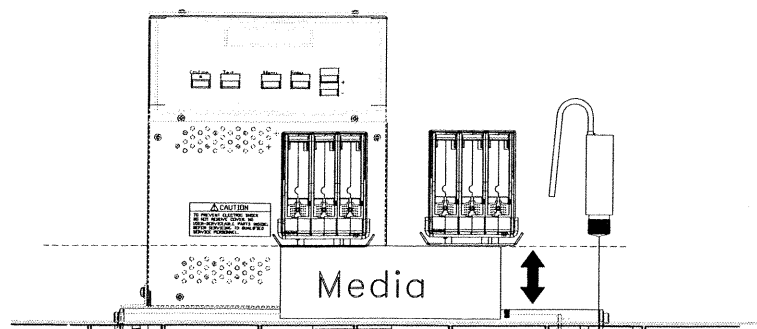
Note: The Head Print Assemblies are to low when the print looks smeared or clumped together.

Synchronizing new Print Cartridges in the Head Print Assembly

Each bank of three Print Cartridges has to be synchronized to print graphics, scaleable fonts or just to justify the left edge of print. If the Print Cartridges are not synchronized anything that requires two or three Print Cartridges to line up a left edge or to print next to each other may print to the left of one another or on top of each other. When installing a new print cartridge or cartridges into a 3 Head Print Assembly it may need to be realigned with the other print cartridges. Synchronizing the print cartridges in the Head Print Assemblies is accomplished using the Service Menu option Adjust Print.

The following procedures will refer to the left 3 Head Print Assembly as Bank A, and the right 3 Head Print Assembly as Bank B. Synchronize each Bank of Print Cartridges by aligning the Test Pattern that is printed by each of the Print Cartridges. Each Print Cartridge will print a Test Pattern like the one below.
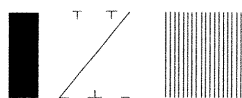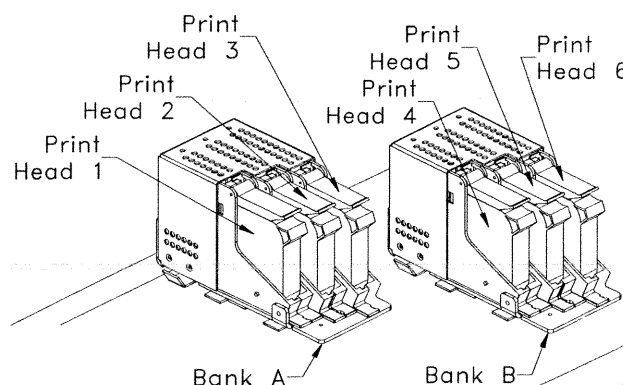
Head 2 Bank A

Each carriage uses the leftmost Print Cartridge of the three to synchronize the other two Print Cartridges. Counting from left to right, the leftmost Print Cartridge in Bank A is referred to as Head 1 and the leftmost Print Cartridge for Bank B is referred to as Head 4. For each additional bank of 3 Head Print Assemblies added increment the count by three. The series would be Head 1, Head 4, Head 7, and Head 10.

The Test Pattern for a bank of Print Cartridges should look like the following example when all three print cartridges are synchronized.
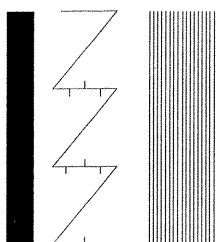
Head 1 Bank A

Head 2 Bank A

Head 3 Bank A

Note: Have several pieces of media to use when synchronizing the Print Cartridges.

When lines of print start to run on top of each other the Print Cartridges have to be synchronized vertically. Perform a Vertical adjustment whenever the center of the Test Pattern isn't a solid crooked line. Work down from Head 1 on Bank A or Head 4 on Bank B.

The following steps are an example of how to synchronize Print Cartridges for Bank A. The same steps are taken for vertically synchronizing Bank B or any additional banks.

Example:
In the example below the crooked line in the center indicates Print Cartridge #3 has to have the printer perform a vertical print adjustment.

Use the following steps to adjust Print Cartridge #3:

- Accessing the menu can only be accomplished in the OFF LINE mode.

- When in ON LINE mode press the **[On Line]** button. Once OFF LINE the service menus are accessible. Press the **[Menu]** and **[-]** **(Minus)** button simultaneously until SERVICE MENU appears on the LCD display in about two seconds.

- Press the **+** or **-** buttons to scroll through the Service Menu options until the 1. ADJUST PRINT option is displayed on the LCD panel.

- Press the **[Enter]** button to select this option.

- Now print out a Test Pattern by pressing the **[Test]** button. The printer will print a Test Pattern like the following example:

Vertically Synchronizing a Bank of Print Cartridges

Head 1 Bank A

Head 2 Bank A

Head 3 Bank A

The example shows Print Cartridge #3 is to high.

- Press the [**+**] or [**-**] buttons to scroll through the Adjust Print menu options until the HEAD 3 UP DOWN option is displayed on the LCD panel.

- Press the **[Enter]** button to select this option.

- Press the **[+]** (UP) button to increment the horizontal line value on the LCD display.

- Press the **[-]** (DOWN) button to decrease the horizontal line value on the LCD display.

- Press the **[Enter]** button to select the desired value. An Asterisk (*) will appear in front of the new selection.

- Press the **[Test]** button to print another Test Pattern. This time the Test Pattern is printed using the entered selection. The pattern printed should look like the following example:
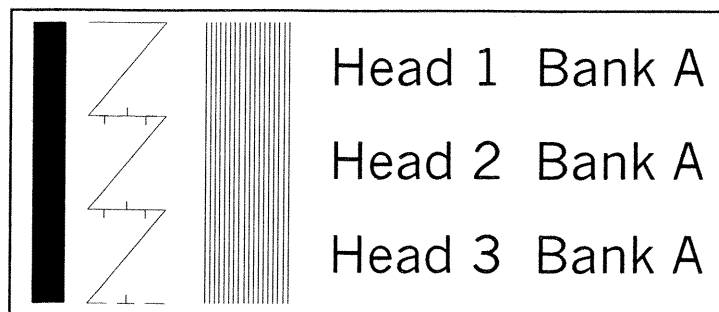
When the correct numeral is selected the center test pattern will be one long crooked line.

- Press the **[Menu]** button several times to back out of the Service Menu.

- Press the **[On Line]** button; now the printer is ready for use.

When a line of print is split apart or the left edge of a block of lines don't line up with the left edge of the other lines the Print Cartridges have to be synchronized horizontally. Perform a Horizontal adjustment whenever the large solid line and the set of 18 thin vertical lines do not form long vertical lines for the whole bank of Print Cartridges.

The following steps are an example of how to synchronize Print Cartridges for Bank A. The same steps are taken for horizontally synchronizing Bank B and any extra banks of Print Cartridges.

Example:
In the example below the large vertical line on the left and 18 thin vertical lines indicate Print Cartridge #2 has to have the printer perform a horizontal Print Adjustment.

Use the following steps to adjust Print Cartridge #2:

- Accessing the menu can only be accomplished in the OFF LINE mode.

- When in ON LINE mode press the **[On Line]** button. Once OFF LINE the service menus are accessible. Press the **[Menu]** and **[-] (Minus)** button simultaneously until SERVICE MENU appears on the LCD display in about two seconds.

- Press the **[+]** or **[-]** buttons to scroll through the Service Menu options until the 1. ADJUST PRINT option is displayed on the LCD panel.

- Press the **[Enter]** button to select this option.

- Now print out a Test Pattern by pressing the **[Test]** button. The printer will print a test pattern like the following example:

The example shows Print Cartridge #2 is to far to the right.

Horizontally Synchronizing a Bank of Print Cartridges

```
┌─────────────────────────────────────┐
│ ▌    ╱│ ║║║║║                        │
│ ▌   ╱ │                             │
│ ▌  ╱  │ Head 1  Bank A              │
│ ▌ ╱   │                             │
│ ▌╱    │ Head 2  Bank A              │
│ ▌     │                             │
│ ▌     │ Head 3  Bank A              │
└─────────────────────────────────────┘
```
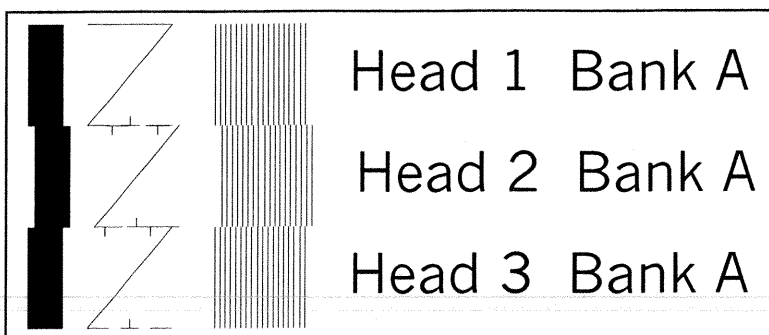
- Press the **[+]** or **[-]** buttons to scroll through the
  · Adjust Printing menu options until the HEAD 2 SIDE
  TO SIDE option is displayed on the LCD panel.

- Press the **[Enter]** button to select this option.

- Press the **[+]** (LEFT) button to increment the
  horizontal line value on the LCD display.

- Press the **[-]** (RIGHT) button to decrease the horizontal
  line value on the LCD display.

- Press the **[Enter]** button to select the desired value. An
  Asterisk (*) will appear in front of the new selection.

- Press the **[Test]** button to print another test pattern.
  This time the test pattern is printed using the entered
  selection. The pattern printed should look like the
  following example:

```
┌─────────────────────────────────────┐
│ ▌    ╱│ ║║║║║                        │
│ ▌   ╱ │                             │
│ ▌  ╱  │ Head 1  Bank A              │
│ ▌ ╱   │                             │
│ ▌╱    │ Head 2  Bank A              │
│ ▌     │                             │
│ ▌     │ Head 3  Bank A              │
└─────────────────────────────────────┘
```
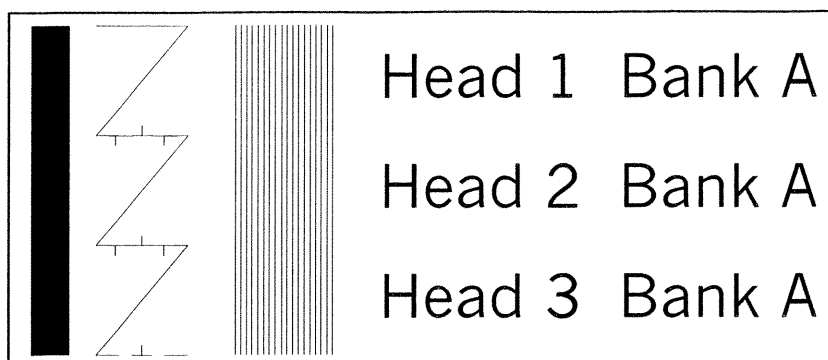
When the correct numeral is selected the large line and the set
of 18 vertical lines form long vertical lines down the entire
Bank A of Print Heads:

- Press the [Menu] button several times to back out of the Service Menu.

- Press the [On Line] button; now the printer is ready for use.

The two or more Banks of print cartridges can be combined and used as one large block of print heads. This is best done for large fonts and big graphics or two dimensional bar-coding. To synchronize two or more 3 Head Print Assemblies together requires mechanically adjusting the banks together and using the menus to horizontally synchronize the banks together.

Using the Head Print Assemblies Together.

The Service Menu will adjust the print head Bank B to Print Bank A to synchronize the when the large and the set of 18 vertical lines do not form long vertical lines. Perform the following steps to synchronize Bank A and Bank B and any extra banks of Print Cartridges.

The following graphic shows when the two banks need to be synchronized using the Service Menu.

The mechanical adjustment to combine Bank A and Bank B has to be done before both carriages can be synchronized.

Adjust the Head Print Assemblies to Print Together.

	Head 1	Bank A		Head 1	Bank A
	Head 2	Bank A		Head 2	Bank A
	Head 3	Bank A		Head 3	Bank A
	Head 4	Bank B		Head 4	Bank B
	Head 5	Bank B		Head 5	Bank B
	Head 6	Bank B		Head 6	Bank B
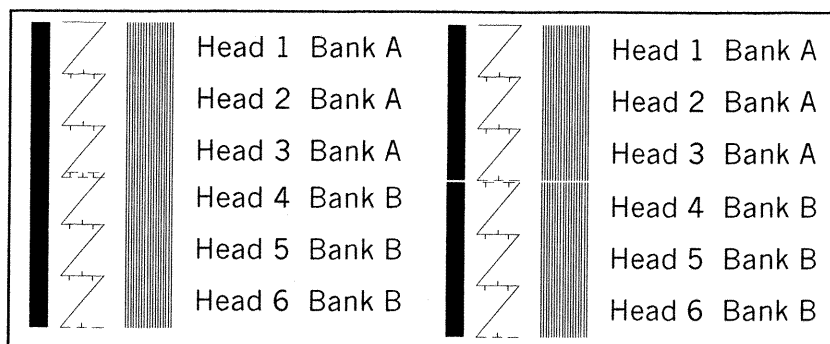
Example: Use the following steps to adjust the two 3 Head Print Assemblies together.

Adjusting the Banks together

1. Move the 3 Head Print Assembly to the area that Bank A will be printing on the piece.

2. Secure Bank A in place. In this example the other Bank of print cartridges are going to get set relative to Bank A.

3. Move the front of the right Head Print Assembly (Bank B) 1.5 inches forward from Bank A.

4. Print out a Adjust Printing test message.

5. Make adjustments by moving Bank B in or out. When the Adjust Printing test pattern makes a solid pattern across both banks then level the banks to make certain they are both the same height.

6. Secure the right 3 Head Print Assembly (Bank B) in this position.
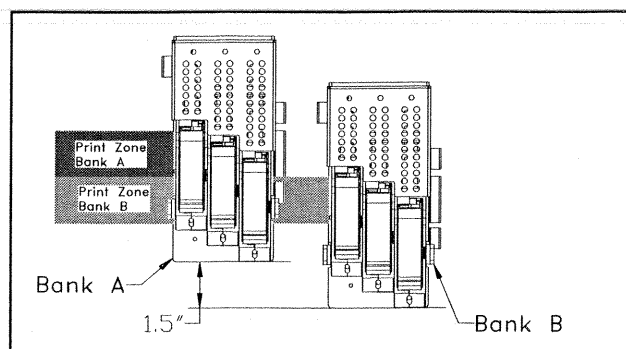
Note: The same steps are used whether adjusting 2 or more banks of print cartridges together.
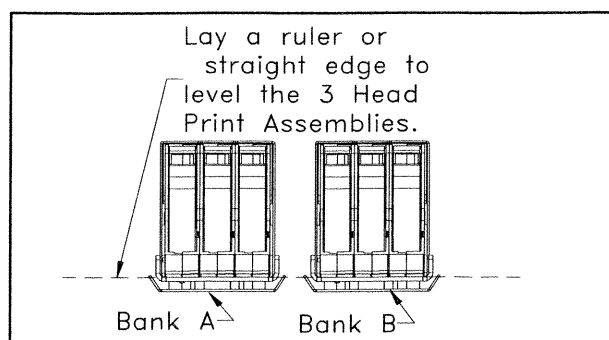
The two 3 Head Print Assemblies need to be synchronized using the Adjust Print menu when the Test Pattern looks like one of the two examples below.

Synchronizing 3 Head Print Assemblies

	Head 1 Bank A			Head 1 Bank A
	Head 2 Bank A			Head 2 Bank A
	Head 3 Bank A			Head 3 Bank A
	Head 4 Bank B			Head 4 Bank B
	Head 5 Bank B			Head 5 Bank B
	Head 6 Bank B			Head 6 Bank B
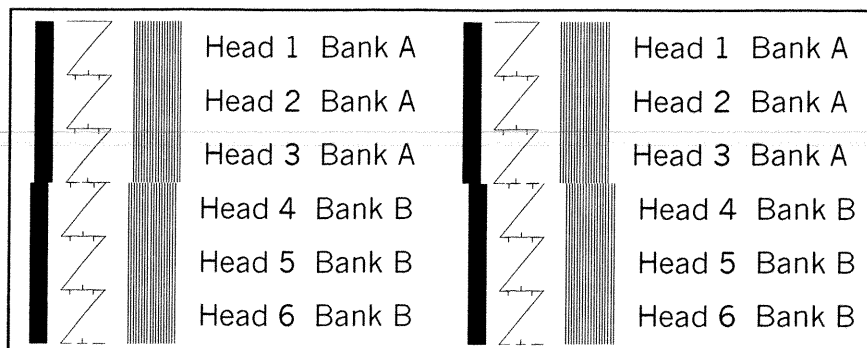
The Adjust Print menu has to be used when synchronizing the two banks together. For more information about the Adjust Print menu see the section in the Service Menu.

- Press the **+** or **-** buttons to scroll through the Service Menu options until the 1. ADJUST PRINT option is displayed on the LCD panel.

- Press the **Enter** button to select this option.

- Press the **+** or **-** buttons to scroll through the Adjust Print menu options until the Bank B to Sensor option is displayed on the LCD panel.

- Press the **Enter** button to select this option.

- Now print out a Test Pattern by pressing the **Test** button. The printer will print a Test Pattern like the preceding example.

The Test Pattern consists of three rows of different patterns, the first wide line and the eighteen vertical lines are used for synchronizing Bank A and Bank B.

When the two patterns do not match to form long vertical lines, then perform the following steps.

- Press the **+(MORE)** button to increment the Move Bank B value on the LCD display.

- Press the **- (LESS)** button to decrease the Move Bank B value on the LCD display.

- Press the **Enter** button to select the desired value. An Asterisk (*) will appear in front of the new selection.

- Now print out a Test Pattern by pressing the **Test** button. The printer will print another test pattern. This time the test pattern is printed using the entered selection.

The pattern printed should look like the following example:


```
Head 1  Bank A
Head 2  Bank A
Head 3  Bank A
Head 4  Bank B
Head 5  Bank B
Head 6  Bank B
```
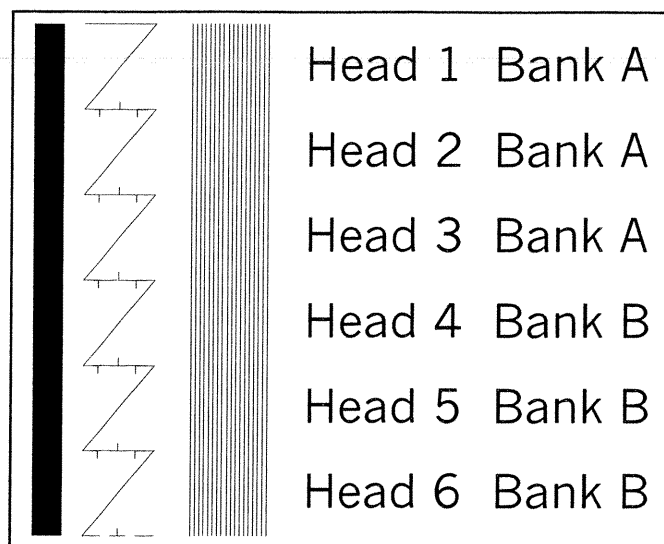
When correct all lines should be straight.

- Press the **Menu** button several times to back out of the Service Menu.

- Press the **On Line** button; now the printer is ready for use.

Moving the Wipers

The 3 Head Print Assemblies have several holes for relocating the two narrow Wipers. Move the wipers when synchronizing banks of print cartridges or when two or more banks of print cartridges are printing near each other.

Pay special attention when using the left Head Print Assembly with the right Head Print Assembly. If the wipers run over an area on the media where ink was just sprayed the print will smear or smudge. The area where ink is sprayed onto the media is referred to as a Print Zone. Use the wide wiper located on the right Head Print Assembly to judge where the Print Zone for Bank B is located. Move the Wipers to an area outside of the Print Zone to maintain the best print quality.

Perform the following steps to move the Wipers:

1. Put the right Head Print Assembly and the left Head Print Assembly in the proper location to print on the piece of media.

2. Locate on the right Head Print Assembly the Print Zone. The wide wiper on the Head Print Assembly gives an approximate location of where Bank B is going to print.

3. Remove the two screws securing the Wiper on the left Head Print Assembly (Bank A).

4. Relocate one or both wipers away from Bank B's Print Zone. Reinstall the wiper on Bank A without placing in the path of the Print Zone of Bank B.

Note: Move the Wiper(s) far off to the side if one or both are running along the edge of the piece or just off the edge. This may cause skewing of the print or paper jams.
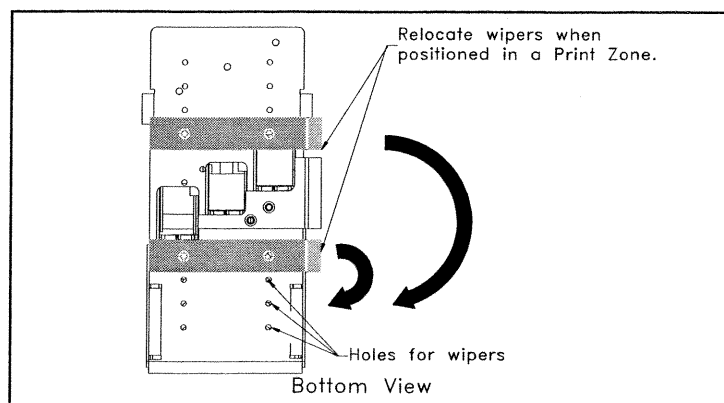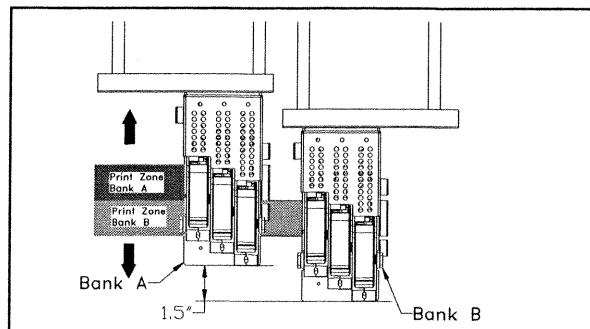
Included in the Accessories are Cartridge Capping Assemblies to enclose the nozzles of the print cartridges. Proper use of the Cartridge Capping Assemblies help in maintaining the quality of print from the print cartridges and help to prevent the ink from drying and creating severe clogging of the print cartridge nozzles.
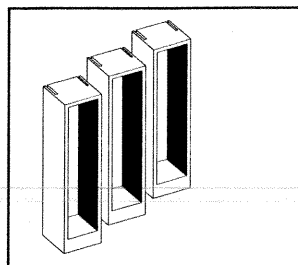
Prolonging the life of Print Cartridges

Use the Cartridge Capping Assemblies when the OEM Printer is left to idle or shut down for a more than a few minutes. To use the Cartridge Capping Assemblies the ink cartridges have to be removed from the 3 Head Print Assembly. **Note**: Keep the ink cartridges in order or numbered otherwise the counter for the percent ink remaining will give false information.

Employ the following steps to use the Cartridge Capping Assemblies.

1. Remove the ink cartridge from the Head Print Assembly. (See section 3-3 for information on removing the ink cartridges.)

2. Remove any excess ink on the nozzles.

3. Install the ink cartridge nozzle first into the Cartridge Capping Assembly. **Note**: Clean any ink buildup on the rubber seal to prevent it from obstructing the nozzles.

4. Press the top section completely into the Cartridge Capping Assembly.

5. Remove the ink cartridge from the Cartridge Capping Assembly in reverse order. **Suggestion**: Check the Print Head Alignment and perform a Purge of the ink cartridges before operating the printer.
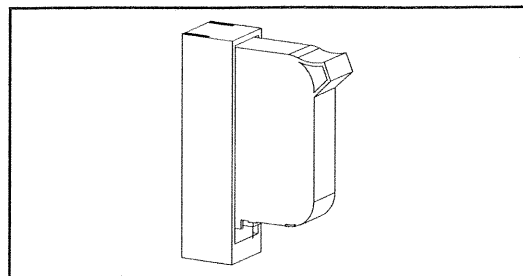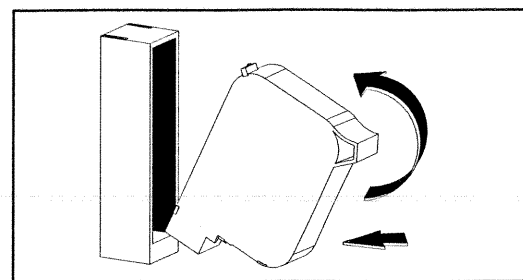
Factors that Affect the Printers Performance

The OEM Industrial Printer is designed to give the best possible performance, but the speed can be affected by these factors.

1. Whether the printer is running on serial or parallel connection with the computer.

2. The amount of memory available in the computer.

3. Whether the printer is running as a network printer or with a print spooler.

4. Dark colored material or printed graphics.

5. Pre-glued flaps on the media

6. Glossy or heavily waxed media.

7. Setting up margins, or sending non printable characters or blank spaces in the records.

8. Sending blank lines in each record.

Tips for Running the Job
1. Connect the printer to the computer with a parallel interface cable.

2. Use a computer dedicated to the printer only.

3. Tab magazines or stapled sheets.

4. Eliminate blank spaces and lines in the records. Extra characters take extra time to process.

5. Records with differing numbers of lines should be followed with a page break or form feed.

The Photo Sensor Assembly has been adjusted at the factory to operate with plain white media against a black background. Before using colored or preprinted media it is best to check the sensors sensitivity to the media and background first. Check by slowly moving the media beneath the sensor. Confirm the red and green LED simultaneously turn on when the media is underneath and turn off when the media is removed. Check that the belt or background surface will not trigger the red and green LED's on the sensor.

Depending on the type of media being used it may be necessary to adapt the sensor to the media by moving the sensor to a more reflective area on the media or by adjusting the sensors to respond to the reflectivity of the media. **Note:** The position that each record is printed may vary. This is due to the sensor being adjustable. Print a test to ensure the positioning of the 3 Head Print Assemblies.

The easiest solution for using media that is colored or pre-printed is to move the sensor over to an area where it will operate correctly as the media passes underneath. Secure the sensor in this place.

If moving the media under the sensor does not turn the red and green LED on or off simultaneously then adjusting the sensor will have to be done.

LED Indicators

Red Output Indicator

The red LED lights when enough light is received for it to be energized.

Green Alignment Indicator

The green LED lights when enough light is received to operate. The green LED aids in setting the photo sensor to the media.

Checking the Photo Sensor Assembly

Repositioning the Photo Sensor

Path of the Media | Area Clear of Print | Area Clear of Print

Position sensor over the area without print or graphics.
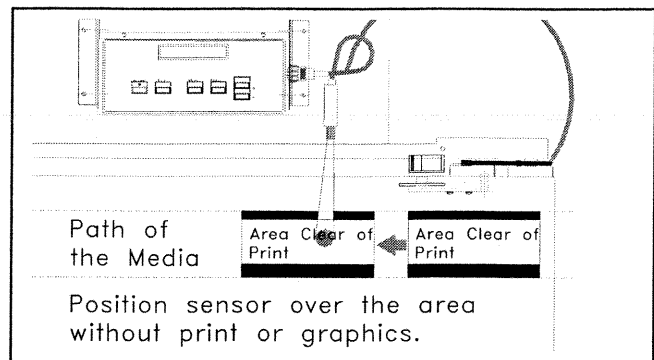
Setting the Photo Sensor to work with Light Colored Media against a Dark Background

Two things are needed to tune the Photo Sensor. 1) One piece of media. 2) A small blade screwdriver. Use the small blade screwdriver to rotate the rotary switch.

When the Red LED is ON and the Green is OFF

Use the following steps to tune the Photo Sensor.

1. Place the piece of media being used underneath the photo sensor.

2. Check that the red LED is illuminated and the green is off.

3. Turn Sensitivity Adjustment Rotary switch clockwise till the **green** and **red** LED are illuminated.

4. Turn Sensitivity Adjustment Rotary switch counter clockwise 1/2 turn.

5. Remove the media, then replace under sensor to check the sensitivity of the sensor. Is the **green** LED off? Yes, then continue, otherwise repeat Steps 3 & 4.

6. Turn Sensitivity Adjustment Rotary switch clockwise 1/2 turn.

Fine tuning the Photo Sensor

Note: The LO/DO Switch has been set to LO at the factory.

```
Green  Alignment
        Indicator                  LO/DO  Switch
(Media  Present)
                                   Sensitivity
Red  Output                        adjustment
Indicator                          rotary
(Media  present)                   15 Turn.
```
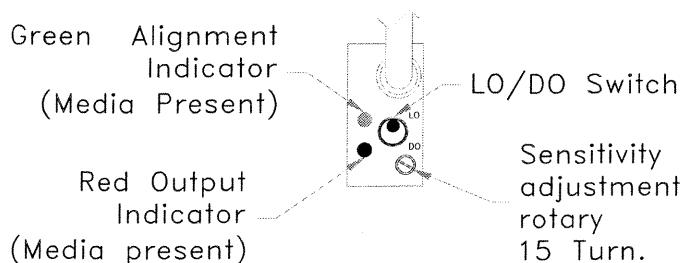
7. Check the sensitivity of the sensor. Remove the media, then replace under sensor. Check that both the red and green LED are illuminated. Is the green LED off? Yes, then repeat Step 1 through Step 6.

When the Red and Green LED are OFF.

Use the following steps to tune the Photo Sensor.

1. Place the piece of media being used underneath the photo sensor.

2. Turn Sensitivity Adjustment Rotary switch clockwise till the red and green LED are illuminated

3. Turn Sensitivity Adjustment Rotary switch counter clockwise 1/2 a turn.

4. Remove the media, then replace under sensor to check the sensitivity of the sensor. Is the green LED off? If yes, then continue, otherwise repeat Steps 2 & 3.

5. Turn Sensitivity Adjustment Rotary switch clockwise 1/2 a turn.

6. Check the sensitivity of the sensor by removing the media then replace under sensor. Check that both the red and green LED are illuminated. Is the green LED off? If Yes, then repeat Step 1 through Step 6.

Note: The LO/DO Switch has been set at the factory to the LO setting.

When the background is very reflective or light it may be necessary to adapt the Sensor by setting the switch to DO. The operation of the green LED and red LED will change when operated in this mode. Only the red LED will light up when media is underneath and the green LED is lit when the Sensor is focused on the background.

1. CHECK the sensor to make sure the middle switch is set to the DO position. If not, do so.

2. Verify the green LED is lit. If the red LED is lit or none of the LED's are lit then turn the screw CLOCKWISE until only the green LED is lit.

3. Put a piece of the media being used between the sensor and the background. Verify the red LED is lit. **Note**: Go to the System Test in the Service Menu to check for the transition of the sensor from **p** to **P**.

Setting the Sensor to work with Dark Media against a bright background

Green Indicator
(No media)

LO/DO Switch
Sensitivity
adjustment
rotary
15 Turn.

Red Indicator
(Media present)
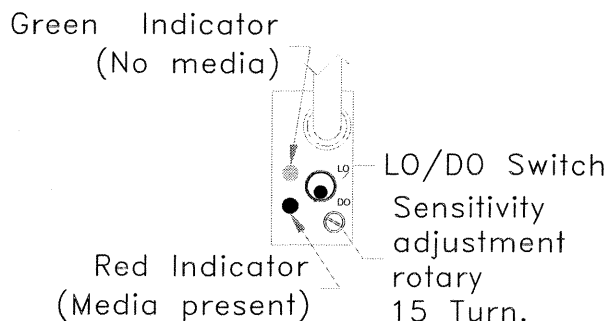
4. Check the sensitivity of the sensor by removing the media then replace it under the sensor. Check that the red LED is illuminated. Is the green LED off? If Yes, then remove the media and check that the green LED is illuminated and the red is off.

Front Panel Controls and LCD Display

Use the controls on the Front Panel Assembly, consisting of six control buttons and an LCD display, to set up the Industrial Printer for proper operation with the computer system.

The control button definitions are:

```
 00000/Hr    Exec
  000% spd     0  pcs
```

On-Line   Test   Menu   Enter   +

    •   -

Press +/- to
Clear Data Buffer
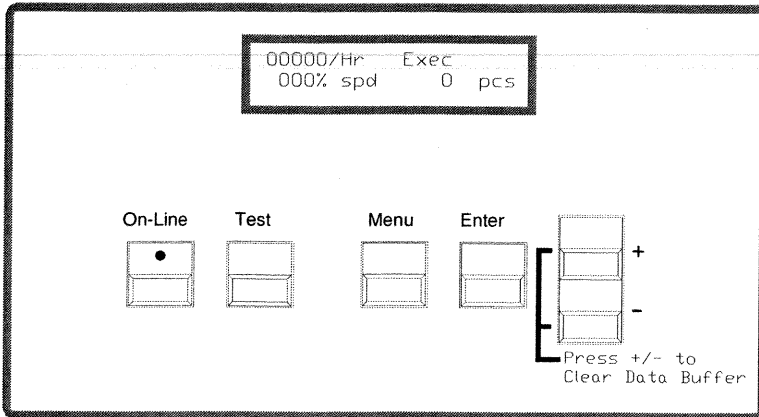
Button	Function
[ON LINE]	Toggles the printer either On Line or Off Line. Begins printing accepted address data (records) from the computer or data in the buffer. Exits the menus with out changing menu settings. Allows the printer to resume printing after an error occurs.
[TEST]	Prints a internal test message. Hold down for continuous printing of the test message. Prints menu settings and internal alignment patterns for the printer.
[MENU]	Press the [**Menu**] button to access the Main Menu. Press and hold the [**Menu**] button for two (2) seconds to access the Setup Menu. Depress the [**Menu**] and [**-**] buttons to access the Service Menu. Exit the control panel menus. First press [**Enter**] to save a menu setting.

[ENTER]	Selects a menu option displayed on the control panel. Saves a new menu setting. An asterisk (*) will appear to the right of the value to indicate the new value has been entered.
[+] / [-]	Scroll up [+] and down [-] through the menu options. Enters a YES [+] or NO [-] for a particular menu options. Use both keys together to clear any data that was sent to the printer and stored in the data buffer.

What does the display show?

Approximated pieces expected at current speed.

Print Quality

00000/Hr   Lxec

000% spd   0 pcs

% of the speed required for the print quality displayed.

Piece counter. Reset after every run.
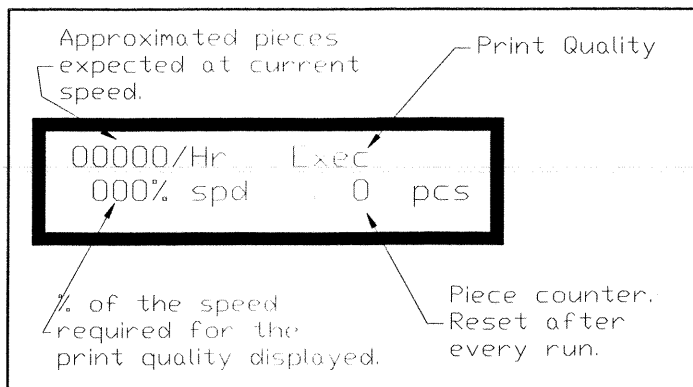
Conventions used in the Printer Menu System section.

Bold with brackets is used for the **[Menu], [On Line], [Enter], [+] Plus, [-] Minus** buttons when they must be pressed to program or operate the printer.

Special fonts are used to highlight words that appear on the LCD display, and menu options: i.e

Main Menu

Use this menu to choose the format and style of address printed and for information to assist in production. Selected menu options from a sub-menu will appear first in the list of options.

Note: The printer driver overrides most control panel settings in the printer. Some of the control panel settings are also configured in the printer driver.

1. ADDRESS LAYOUT

Use this option to change the page layout for your mail piece.

Menu Items	Selections	Explanation
A. Distance From Left	0.00 to 13.50	This menu item allows you to change the position of the record on the media by moving the record away from the left edge of the media. Distance From Left is the distance measured from the Left edge of the media to the first printable character.

Example:

A. Distance From Right	0.00 to 13.50	This menu item only appears when the Orientation is set to Invert. Distance From Right is identical to Distance From Left except the distance is measured from the Right edge of the media. **Note:** Setting this value too low will force long records to get clipped.
B. Distance From Top	0.00 to 3.00	This menu item allows you to change the position of the record without moving the Banks of Print Cartridges. The Distance from top is the distance between the top edge of the media and the base of the first line of the address. **Note:** Increasing the top margin decreases the print area.
B. Distance From Bottom	0.00 to 3.00	This menu item only appears when the Orientation is set to Invert. The Distance from Bottom is the distance between the bottom edge of the media and the base of the first line of the address.

C. Line Spacing	`Automatic`
	`3 lines / inch`
	`4 lines / inch`
	`6 lines / inch`
	`8 lines / inch`
		This sets the distance between lines of text. It is measured as the number of lines per inch of text. Note: Whenever changing the point size of the font, use the automatic line spacing option. The printer will automatically select the correct setting for the increased or decreased font size of the characters being printed.

D. Orientation	`Normal` or `Invert`	This item changes the direction that the print appears on the media. *Normal* prints upright when viewed from the front of the Head Print Assemblies. edge of the envelope is located on the same side as the print cartridges are. *Invert* reverses the print 180 degrees. Setting the printer to Invert does change some of the menu items.

2. PRINT QUALITY

This option changes the number of dots sprayed to print characters or graphics on the media. Changing the amount of ink sprayed also affects how fast the Transport Belts are capable of running before the print becomes deformed. The LCD display will show a new **%spd** whenever the Print Quality is changed. These menu items are available in the printer driver and override the control panel settings.

Menu Items	Explanation
`Executive`	This is the darkest of the four print qualities, the slowest print speed and uses the most ink. To get the best print quality in Executive the maximum speed to run the transport belt is 24 inches per second (ips) or 60 centimeters per second (cm/sec).
`Letter`	To get the best print quality in Letter the maximum speed to run the transport belt is 48 ips (121 cm/sec.).
`Draft`	Draft quality will print documents fast and save ink. To get the best print quality in Draft the maximum speed to run the transport belt is 72 ips (182 cm/sec).
`Super Draft`	This option offers the highest print speed and prints the lightest of the four print qualities. To get the best print quality in Super Draft the maximum speed to run the transport belt is 96 ips (243 cm/sec).

3. FONT

Use this option to alter the fonts characteristics: typeface, point size, spacing, stroke weight, and style. The printer driver downloads Windows True Type fonts and overrides internal fonts selected through the control panel.

Menu Items	Selections	Explanation
A. Name	Courier San Serif Roman Baxter Hancock Names of fonts that are recognized from the PCMCIA Card slot will be added to the end of the list of selections.	Select the style of font to print the records with. Many optional fonts are available by installing an optional font card. The Font card must be installed (Font label facing the front of the printer). Turn the printer power off for 10 seconds or more. Insert the font card, then power on the printer to use the external font card.
B. Size	4 to 30	This item changes the size of the internal font.
C. Width	Condensed(50%) Thin (75%) Normal (100%) Wide (125%) Expanded(150%)	This item to changes the width of spaces between characters and the width of characters. *Normal (100%)* print width is the standard width of characters and spaces between characters. *Thin* (75%) and *Condensed* (50%) will decrease the spacing between characters and decrease the width of characters. *Wide* (125%) and *Expanded* (150%) increase the width of characters and spaces.
D. Bold	On or Off	This item increases the character stroke weight (thickness of print).
E. Italic	On or Off	This item refers to the *oblique shape* of a character.
F. Outline	On or Off	This item prints only the outline or the edge of the fonts shape. All the records printed using Outline will appear as *hollow text*.

4. BARCODE

Use this option to print a USPS (US Postal Service Postnet Barcode) barcode on the piece of media and to place it above or below the record. For information on the requirements to print a UPSP barcode, see Appendix G.

Menu Items	Selections	Explanation
A. Location	Above Address Below Address	Select the US Postal Service Postnet Barcode options from the following selections:

	off	ABOVE ADDRESS: Prints the barcode in the address block above the first line of the address on the media.
		BELOW ADDRESS: Prints the barcode below the last line of the address in the address block on the media.
		OFF : Stops the printing of a Delivery Point Barcode (DPBC) on the media.
		Note: This option has the printer generate the USPS barcode.
B. 5 Digit On/Off	ON or OFF	This item prints a 5 Digit barcode for a five digit zip code. **Note**: Only a 5 Digit barcode is printed for a five digit zip code when enabled. A Delivery Point Bar Code cannot be generated from a five digit zip code.

5. ADDRESS RECOVERY

When something goes wrong while printing use this option to direct the printer to re-print up to 99 of the last records or to clear the printers memory of all records.

Menu Items	Selections	Explanation
A. Get Addresses	NONE TO RECOVER or 00 to 99 Press the [**Enter**] button to select the record and advance the display to the next to last record.	This option retrieves up to 99 records from the data buffer. The display will say 00: and show the first 16 characters of the last address printed. If *NONE TO RECOVER* is first displayed then the data buffer is empty.
B. Clear Memory	YES or NO	This option removes any data left in the data buffer. The alternative way to clear data from the Data Buffer is to press the [**+**] plus and [**–**] minus buttons simultaneously.

6. CLEAR COUNTER

Use this option to clear the piece (batch) counter back to zero.

Menu Items	Selections	Explanation
	YES or NO	This option resets the counter to zero on the display. Select No to leave the current number of pieces printed (*pcs*) on the LCD display.

7. NOT IMPLEMENTED

Not Available at this time.

8. NOT IMPLEMENTED

Not Available at this time.

9. IMAGE OVERLAY

This menu item is used in conjunction with the W-InkJet overlay printer driver. Use this option to print redundant text or graphics in the same location on every piece. The Image Overlay option is best used for printing a company logo and return address.

Menu Items	Selections	Explanation
A. Clear Overlay	Press Enter to Clear or Exit	This option clears the overlay data in the printers' memory.
B. Print Overlay First	Enable or Disable	This option prints the data sent for the overlay onto the first piece. Use this piece to verify the location of the overlay is correct.

10. PURGE PRINT HEAD

This menu item is to clean the ink jet cartridge nozzles. The purge process fires all the ink jet nozzles onto a piece of media to dislodge and clear any dried ink on the print nozzles. Often this will return the print quality to a normal level.

Menu Items	Selections	Explanation
	Yes or No	This item will fire all the nozzles of a print head onto a piece of media. The printer must be operating for the nozzles to get purged onto a piece of media. **Note**: Once the purge is started the **[-]** minus button must be pressed to stop the cycle.

11. RESET INK COUNT

The printer calculates the amount of ink used by each of the Print Cartridges. When the red led on a 3 Head Print Assembly starts to blink it is a signal that one or more of the Print Cartridges is less than 5% full and it must be changed relatively soon. After new Print Cartridges are installed the Ink Count needs to be reset to stop the red led from blinking.

Menu Items	Selections	Explanation
	1,2,3,4,5,6, up to 12	This item displays the estimated amount of ink remaining in the print cartridge(s). Press the **[+]** plus or **[-]** minus button to scroll through the print cartridges 2,3,4, etc. When the desired Print Cartridge number is displayed, press the **[Enter]** button to reset the percent ink to 100%.

```
   Estimated amount of Ink    ┌─Print Cartridge #
  ┌ remaining Print Cartridge.  /
  |                            /
 ┌─────────────────────────────────┐
 │    5% INK IN HEAD 1+            │
 │  ENTER TO RESET      ─         │
 └─────────────────────────────────┘
   /                         / │
  Press Enter when a new   /Press the
  ┌ Cartridge is installed. │ [+] (plus) or [-] (minus)
  └ Reset the percentage to └─button to scroll the
    100%                     print cartridge
                             numbers up or down.
```
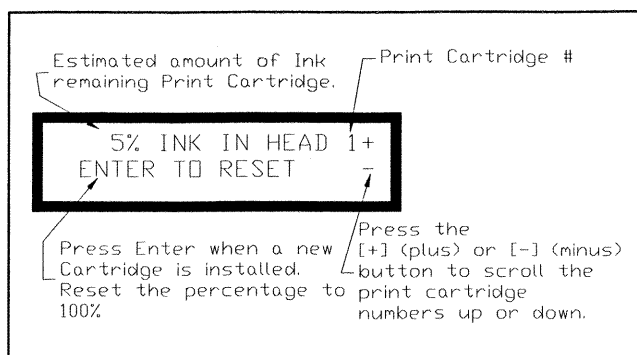
Note: The calculation used to determine the percentage of ink available is dependent on the setting of the menu item *PRINT HEAD SIZE* in the *SETUP MENU.*

SETUP MENU

The Industrial Printer has a Setup Menu that lets you configure the Industrial Printer so it will function correctly with the computer and computer software. Use the Setup Menu to also display the menus in another language besides English. Hold down the [**Menu**] button for two (2) seconds until SETUP MENU is displayed on the first line of the LCD. Select the desired menu option when it appears on the second line of the LCD.

1. PRINT HEAD SIZE

Enable this option for the printer to keep track of the ink usage for the HP 51645A ink cartridges or the ink reservoir system.

Menu Items	Selections	Explanation
	Normal Capacity or Extended Capacity	Select the type of Print Cartridge being used with the printer. Changing the Print Head Size alters how the percentage of ink used is calculated for the menu item *11. RESET INK COUNT*. **Note**: The reservoir system is nine times the volume of a HP 51645A ink cartridge.

2. NOT IMPLEMENTED

Not Available at this time.

3. LINES PER ADDRESS

Set the number of lines of text the record will consist of when printing onto the media.

Menu Items	Selections	Explanation
	1 to 66	Set the number of lines to match the number of lines in a record that will be sent to the printer.

4. COMMUNICATIONS

Data is transmitted from the computer to the printer through the parallel port (parallel interface) or the serial port (serial interface). **Note**: The current settings of the *SERIAL* menu are shown to the right on the LCD display.

Menu Items	Selections	Explanation
A. Baud Rate	1200 Baud 2400 Baud 4800 Baud	Select the baud rate that matches the computers for communication over the serial port

	9600 Baud 19200 Baud	
B. Parity	Odd Even None	Use the following steps to change the serial communications Parity.
C. Word Length	7 Data Bits 8 Data Bits	Use the following steps to change the serial communications word length
D. Line Termination	CR=CR;LF=LF CR=CR+LF;LF=LF CR=CR;LF=CR+LF CR=CR+LF;LF=CR+LF	The typical software line termination is CR = CR; LF = LF. If your software is not typical then the Line Termination can be modified.

5. HEX DUMP MODE

Utilize this option to print the raw ASCII data (HEX Code) that is being sent to the printer.

Menu Items	Selections	Explanation
	Off or On	Prints the ASCII data being sent to the printer. The media width must be a minimum of 7 1/2" or 191 mm when running in HEX Mode. The page orientation, margins and number of lines are defined by the *ADDRESS LAYOUT* and *LINES/ADDRESS*. The maximum number of usable lines is 16. **Note**: Clear the data buffer before sending data to the printer.

6. LANGUAGE

Customize the printer to match the keyboard of your printer, convert measurements from inches to millimeters and translate the menus from English. Most menus that use inches for measurements are converted to millimeters.

Menu Items	Selections	Explanation
A. Symbol Set	ISO 6 ANSI ASCII ISO 69 FRENCH ISO 21 GERMAN ISO 4 UK ISO 60 NORW / DAN ISO 11 SWED / FIN ISO 15 ITALIAN ISO 17 SPANISH ISO 61 NORW / DAN ISO 10 SWED / FIN ISO 16 PORTUGUESE ISO 8859 ROMAN 8 WINDOWS LATIN 1 PC 8	Match the printers' International Standards Organization (ISO) symbol sets and substitution tables to the one used by the software. The printer has International Standard Organization (ISO) language symbol sets to use when printing in another language. A symbol set contains collections of the symbols and characters that make up a language. For a listing of the characters for the ISO symbol sets see Appendix D.
B. Inch / Millimeter	Inch or Millimeters	This option converts the printer measurement system from inches to millimeters and vice versa.
C. Menu Language	ENGLISH GERMAN FRENCH ITALIAN SPANISH DUTCH POLISH JAPANESE	This option will convert the Main Menu and Setup Menu to their translations in the listed languages.

7. DIVERTER CONTROL

The diverter control option sends a signal to the diverter so the piece used for a purge or as a test piece will be removed from the bundle of printed pieces. To set the diverter control to function properly requires knowing the size of the media and the distance from the sensor. **Note**: Press the **[Test]** button when in the Diverter Control menus to test the settings for the Diverter Arm signal. The transport belts must be moving for the Encoder Assembly to measure distance required in the menus.

Menu Items	Selections	Explanation
A. Diverter Distance	50 to 75	Enter the distance from the sensor to the diverter arm for the printer to send the signal to remove the piece with the purge or test message printed on it from the bundle of records. Set the distance in inches from the diverter to the Sensor Assembly. The range from the Sensor Assembly to the Diverter Arm must be from 50 to 75 inches.
B. Media Length	0.5 to 20.0	Measure the length of the media. The media length is regarded as the distance between the leading edge of the piece to the trailing edge of the piece. This will ensure the media was diverted out of the stack and not extra pieces from the next batch of records. **Example**: If the leading and trailing edge of a 8 ½ x 11 inch piece of copy paper were the 8 ½ inches then the length must be the 11 inch side.

Use a 5 volt DC relay inline with the Accessory Port and the Diverter Arm when connecting to the 5 VDC line [Pin 1] and the Divert Signal line [Pin 2]. Reference the Schematic for the pins to use when connecting to the Accessory Port.
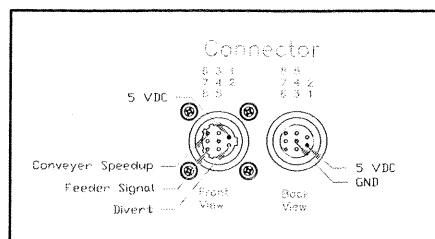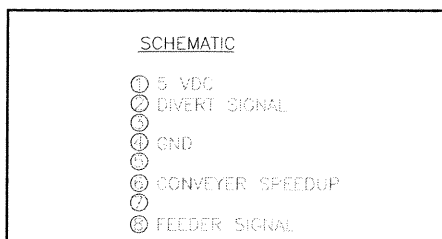
8. POSTAL BUNDLE BRK (BREAK)

Use this option in conjunction with a variable speed conveyor to temporarily increase the speed of the conveyors transport belt. The increased speed of the conveyor will make a noticeable gap between the finished batch of printed records and the next batch of records being printed. A second option to create a gap for trays is available.

Menu Items	Selections	Explanation
A. Enable/Disable Break	OFF VERT (Vertical) BREAK MARKER HORIZ (Horizontal) BREAK MARKER	Select the type of command the printer must receive before it speeds up the conveyor to set a gap between batches while it is operating. The HORIZ BREAK MARKER consists of the repetition of a single character appearing on a single line to start the printer to pause The VERT BREAK MARKER also consists of a repetition of a single character but the character is placed on several lines.

Example of using a series of 3 '#' characters in the Horizontal Break Marker setting to pause the printer.	### ***************23 **XYZ Corporation** **123 Washington Road** **Anytown, CT 06470-1234**

Example of using a series of 3 '#' characters in the Vertical Break Marker setting to pause the printer.	***************23** **XYZ Corporation** **123 Washington Road** Anytown, CT 06470-1234	# # #

Menu Items	Selections	Explanation
B. Bndl (Bundle) Brk (Break) Character	! " # $ % & ' ( ) * + - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J	This option sets what character the printer must receive before it will momentarily halt working. The list of characters to select from are: **! " # $ % & ' ( ) * + - . /** **0 1 2 3 4 5 6 7 8 9**

	K L M N O P Q R S T U V W X Y Z	: ; < = > ? @ **A B C D E F G H I J K L M N O P Q R S T U V W X Y Z** These characters and symbols range from [! ASCII (33)] to [Z ASCII (90)] in a ASCII Table.
C. Bndl (Bundle) Brk (Break) Char Count	01 to 10	Set the number of occurrences the character or symbol must appear in succession before the printer can send a Postal Bundle Break signal.
D. Bndl (Bundle) Brk (Break) Con (Conveyor) Time	0 to 5 seconds	This option sets the amount of time the conveyor will run at the increased speed thereby widening the separation between bundles.
E. Tray Brk (Break) Char (Character)	! " # $ % & ' ( ) * + - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	This option sets what character the printer must receive before it will momentarily halt working. The list of characters to select from are: **! " # $ % & ' ( ) * + - . /** **0 1 2 3 4 5 6 7 8 9** **: ; < = > ? @** **A B C D E F G H I J K L M N O P Q R S T U V W X Y Z** These characters and symbols range from [! ASCII (33)] to [Z ASCII (90)] in a ASCII Table.
F. Tray Brk (Break) Char (Character) Cnt (Count)	01 to 10	Set the number of occurrences the character or symbol must appear in succession before the printer can send a Postal Bundle Break signal.
G. Tray Brk (Break) Con (Conveyor) Time	0 to 5 seconds	This option sets the amount of time the conveyor will run at the increased speed thereby widening the separation between trays.
H. Conveyor Distance	024 to 255	Set the length in inches between the Sensor Assembly and the conveyor.

I. When to speed up	Start of bundle End of bundle	Set the length in inches between the Sensor Assembly and the conveyor.

The printer will use the measured distance to determine when to send a signal to the conveyor to speed up to put a gap between batches of records. Use a 5 volt DC relay inline with the Accessory Port and the Conveyor when connecting to the 5 VDC line [Pin 1] and the Conveyor Speedup Signal line [Pin 5]. See the Diverter Control section for the pins to use when connecting to the Accessory Port.

9. AUTO PURGE

Use this option to keep the print heads from drying out before printing.

Menu Items	Selections	Explanation
A. First Piece Purge	Disable or Enable	If you have long breaks of twenty seconds or more before starting another batch of records this option will purge on the first piece before printing the records.
B. Timed Purge	Off 0020 – 3600 seconds	This option will purge the ink cartridges at timed intervals on a piece. Set the time to determine when to purge the ink cartridges.
C. Conveyor on Purge	None Bundle Break Tray Break	Purge the ink cartridges before running the next batch of records or starting the next tray. Set the Postal Bundle Break options to have this option purge the ink cartridges and put a separation gap for easy retrieval
D. Nozzle keep alive	Disable Enable	This option will keep the ink cartridges from drying out during printing. The printer will print a pattern of nearly invisible single dots that print while the actual address is not being printed.

10. STOP ON INK OUT

Use this option to stop the feeder when the ink counter reaches zero in one of the print heads.

Menu Items	Selections	Explanation
	On or Off	Set this option to have the printer send a feeder stop pulse signal when one of the print heads reaches zero % ink count. A message on the LCD display will be displayed and the bank with the empty print cartridge will have the LED on.

11. ROM REVISION#

This option displays the Firmware Revision installed in the printer and the total number of accumulated print cycles (maintenance count).

Menu Items	Selections	Explanation
	Press the [**Test**] button when ROM REV. is displayed on the LCD. A list of the Main Menu and Setup Menu settings is printed on two pieces of media.	The LCD display will give a momentary view of the ROM Revision and the Maintenance count.

SERVICE MENU

Use this menu for adjusting the print heads in each bank, the banks to each other, checking the transport and sensors and testing the display for proper functionality. The menu options that are preceded with a star or Asterisk (*) are the printers' current settings.

1. ADJUST PRINT

The following steps are for synchronizing the Print Cartridges on the 3 Head Print Assembly (Bank A) and the 3 Head Print Assembly (Bank B), and the optional 3 Head Print Assemblies (Bank C & D). Employ the options Q. BANK A to T. BANK D to help in combining the 3 Head Print Assemblies for printing together or separately.

Menu Items	Selections	Explanation
A. Head 2 up down B. Head 3 up down C. Head 5 up down D. Head 6 up down E. Head 8 up down f. Head 9 up down G. Head 11 up down H. Head 12 up down	280 to 300 Press the [Test] button to print out a Test Pattern. Check the Test Pattern to determine which Print Cartridges are in need of Vertical Synchronization.	Use options A through H to vertically synchronize the individual Print Cartridges in Bank A, Bank B, Bank C or Bank D.

The following is an example of how to synchronize Print Cartridges for Bank A. The same techniques used for Bank A can be applied to any of the other Banks.

Example:
Print out an adjust print Test Pattern by pressing the [Test] button while in the *Adjust Print* menu. The printer will print a Test Pattern like the example to the right.

In this example the crooked line in the center indicates Print Cartridge #3 has to have the printer perform a vertical print adjustment. The example shows Print Cartridge #3 is too high.
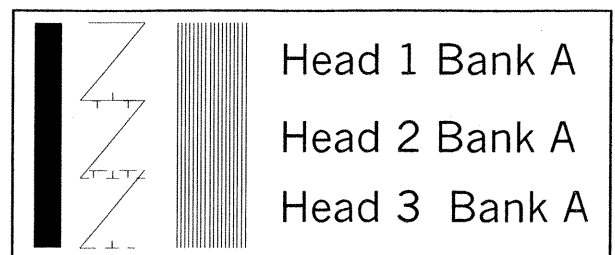
Head 1 Bank A

Head 2 Bank A

Head 3 Bank A

Scroll through the Adjust Print menu options until the *HEAD 3 UP DOWN* option is displayed on the LCD panel.

Enter the menu option to move the setting down. Enter the new value into the printers memory. An Asterisk (*) will appear in front of the new selection. Press the [**Test**] button to print another Test Pattern. The Test Pattern is printed using the entered selection.

When the correct numeral is selected the center Test Pattern will be one long crooked line with hatch marks like the example to the right.

	Head 1 Bank A
	Head 2 Bank A
	Head 3 Bank A

i. Head 2 side to side j. Head 3 Side to Side k. Head 5 Side to Side l. Head 6 side to side M. Head 7 side to side N. Head 9 side to side O. Head 11 side to side P. Head 12 side to side	01 to 99 Press the [**Test**] button to print out a Test Pattern. Check the Test Pattern to determine which Print Cartridges are in need of horizontal Synchronization.	Use the options I through P to horizontally synchronize the individual Print Cartridges in Bank A or Bank B or the optional Bank C or D. When a line of print is split apart or the left edge of a block of lines don't line up with the left edge of the other lines the Print Cartridges have to be synchronized horizontally. Perform a horizontal adjustment whenever the wide solid line and the set of 18 thin vertical lines do not form long vertical lines for the whole bank of Print Cartridges.

The following is an example of how to synchronize Print Cartridges for Bank A. The same techniques used for Bank A can be applied to any of the other Banks.

Example:
Print out an adjust print Test Pattern by pressing the [**Test**] button while in the *Adjust Print* menu. The printer will print a Test Pattern like the example on the right.

In the example to the right the wide vertical line on the left and 18 thin vertical lines indicate Print Cartridge #2 needs a horizontal print adjustment. The example shows Print Cartridge #2 is to far to the right.

	Head 1 Bank A
	Head 2 Bank A
	Head 3 Bank A
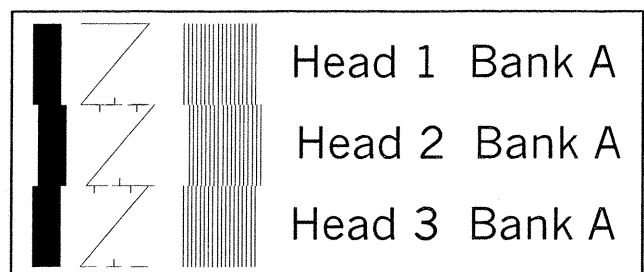
Scroll through the Adjust Print menu options until the *HEAD 2 SIDE TO SIDE* option is displayed on the LCD panel. Select this menu item to change the settings.

Press the [-] button to scroll the values down and move Head 2 left.

Press the [**Enter**] button to select the desired value. An Asterisk (*) will appear in front of the new selection.

Press the [**Test**] button to print another Test Pattern. This time the Test Pattern is printed using the entered selection.

When the correct numeral is selected the wide line and the set of 18 vertical lines form long vertical lines down the entire Bank A of Print Heads.

Head 1	Bank A
Head 2	Bank A
Head 3	Bank A

Q. Bank A to Sensor R. Bank B to Sensor S. Bank C to Sensor T. Bank D to Sensor	00.500 to 36.000 Press the [**Test**] button to print out a Test Pattern. Check the Test Pattern to determine where Banks A, B, C or D are printing on the media.	Use this option to set this distance between the sensor and the first head in each bank. Set each Bank of Print Heads to work together (synchronized) or to work independently in different locations on the media. Check the Test Pattern to determine which Banks are in need of synchronization or for relocating the position of a bank on the media.

For ease of illustration the following example will deal with synchronizing Bank A and Bank B together. It is assumed the Banks of Print Heads have already been mechanically aligned next to each other. The same techniques used for Bank A and Bank B can be applied to synchronize any of the other Banks.

Example:

Print out an adjust print Test Pattern by pressing the [**Test**] button while in the *Adjust Print* menu. The printer will print a Test Pattern like the example on the right. The adjust print Test Pattern consists of three rows of different patterns, the first wide line and the eighteen vertical lines are used for synchronizing Bank A and Bank B.

Head 1	Bank A		Head 1	Bank A
Head 2	Bank A		Head 2	Bank A
Head 3	Bank A		Head 3	Bank A
Head 4	Bank B		Head 4	Bank B
Head 5	Bank B		Head 5	Bank B
Head 6	Bank B		Head 6	Bank B
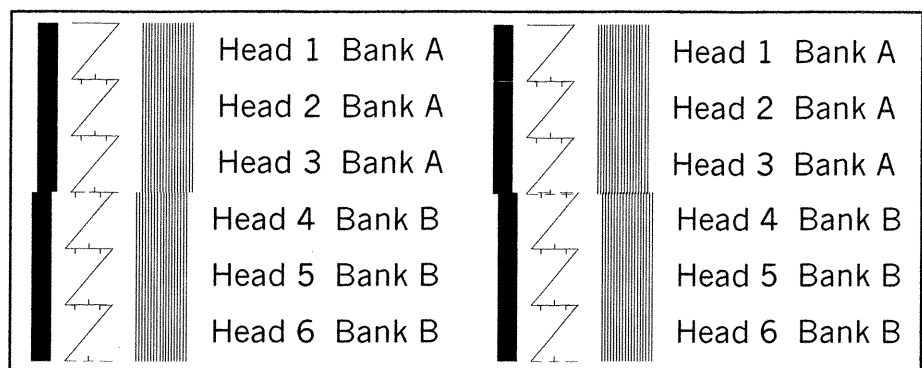
When the two pattern do not match to form long vertical lines, perform the following steps. In the example to the right the wide vertical line on the left and 18 thin vertical lines indicate Bank B needs a horizontal print adjustment. **Rule of Thumb**: Take the distance from the previous bank of print heads

that want to align the next bank with and add 3.5 inches. As an example if Bank A is 7.000 then Bank B starts at 10.500.

Press the **[Enter]** button to select the desired value. An Asterisk (*) will appear in front of the new selection.

When correct all vertical lines should be straight.

Head 1	Bank A
Head 2	Bank A
Head 3	Bank A
Head 4	Bank B
Head 5	Bank B
Head 6	Bank B
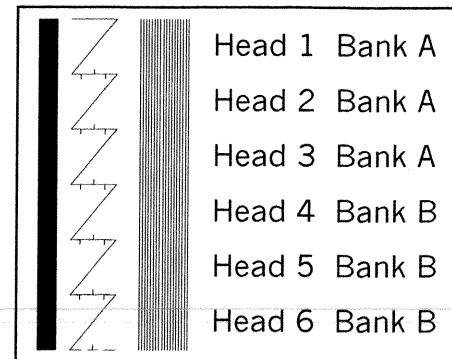
2. TEST SYSTEM

Use this option to check the mechanical and / or electrical operation of the Address Printer.

Menu Items	Selections	Explanation
	Press the **[Enter]** button to select this option. As soon as, the **[Enter]** button is pressed, the printer will be in the test mode.	The sensor is represented on the LCD by the lowercase letter *p* or the upper case letter *P*. The LCD display shows a lower case letter of *p* (sensor unblocked) when the sensor is clear. When the sensor has media in the path the capitol letters *P* (sensor blocked) is shown.

3. TEST DISPLAY

Use the test display option to help determine if the LCD display is not functioning properly i.e. missing characters, strange characters, missing segments, etc.

Menu Items	Selections	Explanation
	Press the **[Enter]** button to select this option. As soon as, the **[Enter]** button is pressed, the printer will be in the test mode.	The test display will scroll characters across the top and bottom of the LCD display.

EXAMPLE:

The LCD display will scroll the lower case alphabet and numerals (0-9) across the top line, while the bottom line will scroll control characters and the numerals. The Test function will cycle twice and return to the Service Menu. See example below for LCD display sample test message.

abcdefghijklmnopqrstuvwxyz 0123456789

\->!#$%&*()_+- =[]:;'<>/? 0123456789

```
defghijklmnopqrstuvwxyz 01
!#$%&*()_+- =[]:;'<>/? 012
```

Example of LCD display with characters scrolling across

Symptoms and Solutions to problems with your Industrial Printer

Problem	Cause	Solution
Nothing Happens when power is turned on	No Power to Unit	Check Power cord.
	Fuse is blown	Call Service Representative
Display Problem (Blank LCD display).	Bad LCD	Call Service Representative
LCD display shows solid black boxes	Bad Power Supply/ Processor board	Call Service Representative
Print Quality Problems (No print)	Dried ink clogging nozzles of Ink cartridge	Clean cartridge with tissue or soft cotton cloth and water. Purge ink cartridge. Replace ink cartridge if required.
	Ink Cartridge empty	Replace ink cartridge.
	Tape on Ink Cartridge nozzle or vent	Remove tape from Ink Cartridge
	Sensor blocked	Clean eye of sensor with soft cotton cloth.
	Bad cable or board.	Call Service Representative
	Printing on belt, address location set off the media.	Correct position with ADDRESS LAYOUT menu or set the ADJUST PRINT menu to set the distance from the sensor.
	Bad Encoder or Encoder is not correctly installed.	Inspect the operation of the Encoder. Plug the Encoder in. Verify the wheel on the Encoder turns.
Print Quality Problem (blanks between printed media)	Faulty or dirty sensor	Clean sensor, adjust if needed.
	Wrong ADDRESS SETUP	Increase or decrease Lines Per Label settings in ADDRESS SETUP to match software.

Problem	Cause	Solution
Ink Print Quality is not sharp (Gray Print)	Ink cartridge almost empty.	Replace Ink Cartridge
	Head Print Assemblies to high	Lower Head Print Assemblies till print is clear.
	Transport Belt is moving too fast.	Slow the Transport Belt until the LCD display is at or below the 100% spd (speed) setting or decrease the Print Quality until the LCD spd is 100% or less.
	Dried ink clogging nozzles of Ink cartridge	Clean cartridge with tissue or soft cotton cloth and water. Purge ink cartridge. Replace ink cartridge if required.
Ink Print Quality is not sharp (Lines through Print)	Ink cartridge almost empty.	Replace Ink Cartridge
	Dried ink clogging nozzles of Ink cartridge	Clean cartridge with tissue or soft cotton cloth and water. Purge ink cartridge. Replace ink cartridge if required.
	Protruding contacts of Print Head Holder bent	Call Service Representative
	Bad Head Drive Board	Call Service Representative
Print Quality Problems (Unwanted Bolding)	ESC sequence turning bold on, located before the address.	Do a HEX Dump of the problem address. Examine for ESC sequence (1B) before the start of the line. Reference printer command codes to find ESC Sequence. Remove the ESC Sequence from the address.
Print Quality Problems (Print looks stretched)	Transport Belt is moving too fast.	Slow the Transport Belt until the LCD display is at or below the 100% spd (speed) setting or decrease the Print Quality until the LCD spd is 100% or less.

Problem	Cause	Solution
Print Quality Problems (Addresses "walking") to next piece.	Incorrect address setup	Do a hex dump, count carriage returns (OD in hexadecimal code), and line feeds (OA in hexadecimal code). Set Address Setup in Setup Menu accordingly. If address ends with a form feed (OC in hexadecimal code), Set address setup for 8 or 9.
Non Uniform print between lines	Print head nozzles crusted over. Print head low on ink. Damaged Flex Circuit	Clean cartridge with tissue or soft cotton cloth and water. Replace print head. Call Service Representative.
Ink Streaking on media	Height adjustment too low. Dirty wipers. Dirt or paper dust on bottom of print head. Wiper(s) of a Head Print Assembly running over the print.	Raise height of Head Print Assemblies. Clean with tissue or soft cotton cloth and water. Clean cartridge with tissue or soft cotton cloth and water. Move the Head Print Assembly away from where the ink is being sprayed or adjust the wipers on the Head Print Assembly.
Print lines don't line up	Head Print Assembly is not level The print cartridges are not synchronized	Level Head Print Assembly to be parallel to the media. Synchronize the print cartridges. See section Print Adjust menu.

Problem	Cause	Solution
Text is printed backwards	The printer is set to run in the wrong direction	Change the DIP Switch setting.
LED Blinking on the 3 Head Print Holder Assembly. The Print Cartridge is still printing.	Print Cartridge is nearly empty.	Replace the Print Cartridge and reset the counter in the printers menu Reset Ink Count.
	The Print Head Size wasn't set correctly.	Change the Print Head Size in the Setup Menu. Reset the counter in the printers Main Menu Reset Ink Count.
	Installed a new Print Cartridge but didn't update the Reset Ink Count in the Main Menu.	Reset the counter in the Reset Ink Count of the Main Menu for the print head that has the blinking LED.
Early feed error	Faulty or Dirty sensor.	Clean sensor, adjust if needed.
	Media transparent or perforated.	Choose different media. Move sensor from problem area of media. Adjust to media.
External Font Card not functioning	Font Card installed incorrectly/ not installed completely	Press font card in till firmly seated. Do not force in or damage may occur to the processor board. Flip card over and retry.
	Printer did not register the External Font Card.	Turn printer off then turn printer back on to allow printer to register External Font Card.

Problem	Cause	Solution
Interface problems (Losing characters & lines)	Bad communications Cable	Replace internal or external cable
	Bad processor board	Call Service Representative.
	RS232 -C (Serial) over maximum length	Replace serial cable, maximum length 15 feet
	Centronic (Parallel) over maximum length	Replace parallel cable, maximum length 10 feet
	Incorrect Software Driver	Use OEM or 24K driver or dumb printer interface (TTY, Teletype, DOS text printer, Generic printer or use 10K, 7600, P.B. W800 and P.B. W600.
Dropping characters, Connected to PC, mini. Main Frames, Wang, etc.	Protocol converter emulating wrong printer / incorrect print driver enabled.	Use Black Box PQ-6 or PQ-7, set up to emulate an IBM 5256 printer.
	Bad or intermittent connection in printer cable.	Replace printer cable.
Communication Overrun (Error Message)	Bad RS232 -C (Serial) cable	Replace serial cable
	Bad Centronic (Parallel) cable	Replace parallel cable
	Computer software XON/XOFF not enabled and/ or DTR not enabled.	Enable software XON / XOFF. Check configuration of host computer or wiring configuration of serial cable.

Problem	Cause	Solution
Comm. Framing Error (Error Message)	Incorrect Baud Rate /Word Length	Turn printer off then back on and send data again. Reset Baud rate in printer or computer.
	Bad Centronic (Parallel) cable.	Replace parallel cable.
Parity Error (Error Message)	Incorrect Parity setting	Turn printer off then back on and send data again. Reset Parity rate in printer or computer.
Printing wrong characters Printing garbage	Incorrect Software Driver	Use OEM or 24K driver or dumb printer interface (TTY, Teletype, DOS text printer, Generic printer or use 10K, 7600, P.B. W800 and P.B. W600.
	Bad processor board	Call Service Representative.

Notes:

_____

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_____

The OEM Printer is designed for trouble free service with a minimal amount of care. Periodic cleaning of the Photo Sensor, Encoder and 3 Head Print Assemblies will be necessary.

Preventative Maintenance:

CAUTION!!
CLEAN PRINT CARTRIDGE, INK SURFACES AND COVERS WITH PLAIN WATER.
ALL METAL AND PLASTIC CAN BE CLEANED WITH ISOPROPYL, DENATURED & RUBBING ALCOHOL OR WATER ONLY.
USING ANY OTHER CLEANING SOLVENTS WILL VOID ALL WARRANTIES. Keep cleaning solvents with petroleum based products from rubber or plastic parts.

If the print quality is unacceptable select the Purge Print Head function from the Main Menu (See Section Purge Print Head). If problems still persist then do the following:

- Remove the Print Cartridge (See Section Remove Print Cartridges). Clean the nozzles with a soft cotton cloth. Use a dry cloth or one moistened with alcohol to clean the ink jet cartridge.
- Remove problem print cartridge and install a new print cartridge.

Perform a self cleaning (Purge Print Head) cycle at the start before printing and periodically while printing to keep the nozzles clear of dry ink and debris.

Cleaning the print cartridges

Clean nozzles

With use, a film and/or dust builds up on the eye of the sensor causing misfeeds of media. Periodically wipe the outside and eye of the sensor with a soft damp cotton cloth (WATER ONLY).
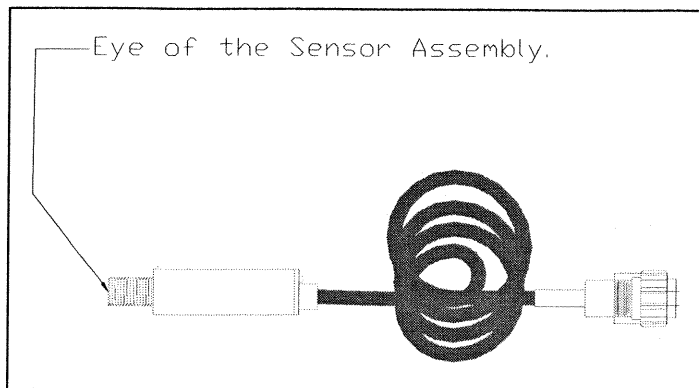
Cleaning the Photo Sensor Assembly

Eye of the Sensor Assembly.

If the wheel on the Encoder Assembly is placed too close to the path of the media where printing occurs, it is possible to get ink transferred from the belts onto the surface of the wheel. Use water to dampen a soft cloth to remove the ink from the encoder wheel.

Cleaning the Encoder Assembly

Clean the Encoder Wheel.
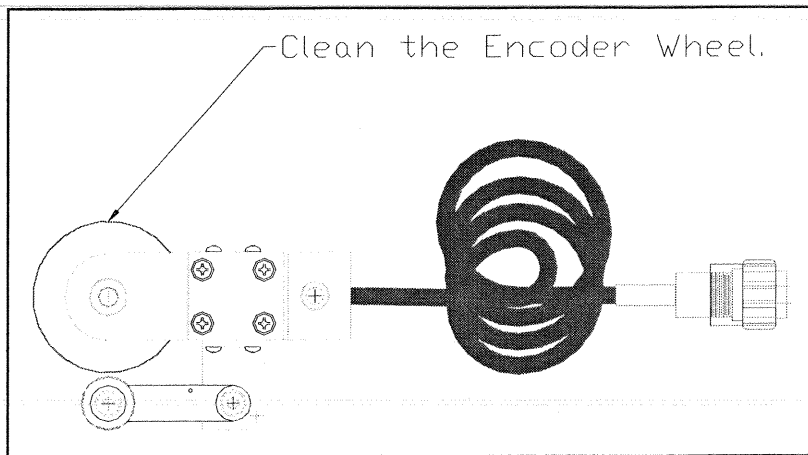
The Wipers beneath the banks of Head Print Assemblies will over time pick up ink, wax, clay and other material from the media it is running over. This will leave marks or smears on the media. Use water to dampen a soft cloth to remove the ink and keep the wipers clean.

Cleaning the Wipers

Wipers

Wipers

Side View

**Bottom View
Set for Right to Left**

Appendix A • OEM MAIN MENU Flow Chart

---MAIN MENU---
1. Address Layout

Menu item				
Address Layout **A. Distance from Left**	DIST FROM LEFT *4.50 in	+MORE -LESS	DIST FROM LEFT *100 mm	+MORE -LESS
Address Layout **B Distance from Top**	DIST FROM TOP *2.00 in	+MORE -LESS	DIST FROM TOP *50 mm	+MORE -LESS
Address Layout **C. Line Spacing**	LINE SPACING 3 lines/inch	LINE SPACING 4 lines/inch	LINE SPACING 6 lines/inch	LINE SPACING 8 lines/inch	LINE SPACING *Automatic
Address Layout **D. Orientation**	ORIENTATION *Normal	ORIENTATION Invert		

① Substituted Address Layout menu selections when ORIENTATION is in ~~Invert~~ Normal *(handwritten)*

Menu item				
① Address Layout A.Distance to Right	DIST TO RIGHT *4.50 in	+MORE -LESS	DIST TO RIGHT *100 mm	+MORE -LESS
① Address Layout B Distance From Top	DIST FROM TOP *2.00 in	+MORE -LESS	DIST FROM TOP *50 mm	+MORE -LESS

---MAIN MENU---
2. Print Quality

Menu item			
Print Quality *Executive	Print Quality Letter	Print Quality Draft	Print Quality Super Draft

---MAIN MENU---
3. Font

Menu item				
FONT ②A. Name	②FONT NAME *Courier	FONT NAME Sans Serif	FONT NAME Roman	FONT NAME Baxter	FONT NAME Hancock
FONT B. Size	FONT SIZE *12 point	+LARGER -SMALLER		
FONT C. Width	FONT WIDTH *Normal (100%)	FONT WIDTH Thin (75%)	FONT WIDTH Condensed (50%)	FONT WIDTH Wide (125%)	FONT WIDTH Expanded (150%)
FONT D. Bold	BOLD *Off	BOLD On		
FONT E. Italic	ITALIC *Off	ITALIC On		
FONT F. Outline	OUTLINE *Off	OUTLINE On		

---MAIN MENU---
4. Barcode

Menu item			
BARCODE A. Location	BARCODE LOCATION *Off	BARCODE LOCATION Above Address	BARCODE LOCATION Below Address
BARCODE B. 5 Digit On/Off	5 DIGIT BARCODE *Off	5 DIGIT BARCODE On	

② To print a list of accessible fonts in their typeface, press the Test button when in the **FONT** menu and the selection **A. Name** is displayed.

③ To print a fonts' character table, press the Test button when in the **FONT NAME** sub-menu and the name of the desired font is displayed.

Appendix A • OEM MAIN MENU Flow Chart

```
----MAIN MENU----       ADDRESS RECOVERY        02: John P. Jones       NONE TO RECOVER.
5. Address Recovery     A. Get Address          Hit Recover ENTER to

                        ADDRESS RECOVERY        Clear the        +YES
                        B. Clear Memory         Address Buffer?  -NO


----MAIN MENU----       Clear address   +YES    Address counter
6. Clear Counter        (pcs) counter?  -NO     cleared. Pieces=0


----MAIN MENU----
7. not implemented


----MAIN MENU----
8. not implemented


----MAIN MENU----       IMAGE OVERLAY           CLEAR OVERLAY           CLEAR OVERLAY
9. Image Overlay        A. Clear Overlay        Press Enter to Clear    Exit

                        IMAGE OVERLAY           PRINT OVERLAY FIRST     PRINT OVERLAY FIRST
                        B. Print Overlay First  *Enable                 Disable


----MAIN MENU----       Purge print   + YES
10. Purge Print Head    Head?         - NO


----MAIN MENU----       100% INK IN HEAD 1  +   100% INK IN HEAD 2  +   100% INK IN HEAD 3  +
11. Reset Ink Count     ENTER TO RESET      -   ENTER TO RESET      -   ENTER TO RESET      -

                        100% INK IN HEAD 4  +   100% INK IN HEAD 5  +   100% INK IN HEAD 6  +
                        ENTER TO RESET      -   ENTER TO RESET      -   ENTER TO RESET      -

                        100% INK IN HEAD 7  +   100% INK IN HEAD 8  +   100% INK IN HEAD 9  +
                        ENTER TO RESET      -   ENTER TO RESET      -   ENTER TO RESET      -

                        100% INK IN HEAD 10 +   100% INK IN HEAD 11 +   100% INK IN HEAD 12 +
                        ENTER TO RESET      -   ENTER TO RESET      -   ENTER TO RESET      -
```

Appendix A • OEM SETUP MENU Flow Chart

```
----SETUP MENU----
1. Print head Size    | Print Head Size      | Print Head Size
                      | *Normal Capacity     | Extended Capacity

----SETUP MENU----
2. not implemented

----SETUP MENU----
3. Lines Per Address  | LINES/ADDRESS+MORE
                      |           -LESS
                      | *7

----SETUP MENU----
4. Communications
   SERIAL             | BAUD RATE    | BAUD RATE    | BAUD RATE    | BAUD RATE    | BAUD RATE
   A. Baud Rate       | 1200  Baud   | 2400  Baud   | 4800  Baud   | *9600  Baud  | 19200  Baud
   SERIAL             | PARITY       | PARITY       | PARITY
   B. Parity          | *None        | Even         | Odd
   SERIAL             | WORD LENGTH  | WORD LENGTH
   C. Word Length     | 7 Data Bits  | *8 Data Bits
   SERIAL             | LINE TERMINATION    | LINE TERMINATION   | LINE TERMINATION  | LINE TERMINATION
   D. Line Termination| *CR=CR, LF=LF        | CR=CR+LF LF=LF     | CR=CR LF=CR,LF    | CR=CR+LF LF=CR+LF

----SETUP MENU----
5. Hex Dump Mode      | HEX DUMP MODE  | HEX DUMP MODE
                      | *Off           | On

----SETUP MENU----
6. Language
   A. Symbol Set      | ISO CHARACTER SET   | ISO CHARACTER SET | ISO CHARACTER SET | ISO CHARACTER SET | ISO CHARACTER SET
                      | *ISO 6 ANSI ASCII   | ISO 69 FRENCH     | ISO 21 GERMAN     | ISO 4 UK          | ISO 60 NORW / DAN | ISO 11 SWED / FIN
                      | ISO CHARACTER SET   | ISO CHARACTER SET | ISO CHARACTER SET | ISO CHARACTER SET | ISO CHARACTER SET
                      | ISO 15 ITALIAN      | ISO 17 SPANISH    | ISO 61 NORW / DAN | ISO 10 SWED / FIN | ISO 16 PORTUGUESE | ISO 8859
                      | ISO CHARACTER SET   | ISO CHARACTER SET | ISO CHARACTER SET
                      | ROMAN 8             | WINDOWS LATIN 1   | PC 8

   LANGUAGE           | MEASUREMENT UNITS   | MEASUREMENT UNITS
   B. Inch/Millimeter | *Inch               | Millimeter

   LANGUAGE           | DISPLAY LANGUAGE | DISPLAY    | DISPLAY LANGUAGE | DISPLAY LANGUAGE | DISPLAY LANGUAGE
   C. Menu Language   | *English         | LANGUAGE   | German           | Italian          | Spanish          | Dutch
                      | DISPLAY LANGUAGE | French
                      | Polish

----SETUP MENU----
7. Diverter Control
   DIVERT CONTROL     | DIVERTER DIST. +MORE
   A. @Diverter Distance |            -LESS
                      | *60.0 inches
   DIVERT CONTROL     | MEDIA LENGTH  +MORE
   B. @Media Length   |               -LESS
                      | *05.0 inches
```

Appendix A • OEM SETUP MENU Flow Chart

----SETUP MENU---- 8.Postal Bundle Brk				
POSTAL BUNDLE BREAK A.Enable/Disable	ENABLE/DISABLE BREAK *Off	+NEXT -PREV	ENABLE/DISABLE BREAK Vertcal	ENABLE/DISABLE BREAK Horizontal
POSTAL BUNDLE BREAK B.@Bndl Brk Char	BREAK CHAR *{*}	+NEXT -PREV		
POSTAL BUNDLE BREAK C.Bndl Brk Char Cnt	CHAR COUNT *06	+MORE -LESS		
POSTAL BUNDLE BREAK D.Bndl Brk Con Time	BNDL BRK TIME *0.200 secs	+MORE -LESS		
POSTAL BUNDLE BREAK E.@Tray Brk Char	BREAK CHAR *{*}	+NEXT -PREV		
POSTAL BUNDLE BREAK F.Tray Brk Char Cnt	CHAR COUNT *06	+MORE -LESS		
POSTAL BUNDLE BREAK G.Tray Brk Con Time	BNDL BRK TIME *0.200 secs	+MORE -LESS		
POSTAL BUNDLE BREAK H.Conveyor Distance	CONVEYOR DIST. *024 inches	+MORE -LESS		
POSTAL BUNDLE BREAK I.When to speed up	WHEN TO SPEEDUP *start of bundle		WHEN TO SPEEDUP end of bundle	

----SETUP MENU---- 9.Auto Purge				
AUTO PURGE A.First piece purge	FIRST PIECE PURGE *Disable		FIRST PIECE PURGE Enable	
AUTO PURGE B.Timed Purge	TIMED PURGE *OFF seconds	+ -		
AUTO PURGE C.Conveyer on Purge	CONVEYER ON PURGE *none		CONVEYOR ON PURGE Bundle break	CONVEYOR ON PURGE Tray break

----SETUP MENU---- 10. stop on ink out	
STOP FEEDER INK OUT *OFF	STOP FEEDER INK OUT On

----SETUP MENU---- 11. Rom Revision #	
ROM REV = P72693 MAINTCOUNT=12345678	Installed RAM 64 MEG Available RAM 15 MEG

③ To print a list of the Main Menu and Setup Menu settings, press the Test button when **ROM REV** is displayed.

④ To test the Diverter Control properties press the Test button while in the menus. The system must be operating for the test to work.

⑤ To test the Coveyor Distance properties press the Test button while in the menu Conveyor Distance menu. Set the menu for a distance from the sensor to the conveyor. The range is from 24" to 255".

Revision D

Appendix A • OEM SERVICE MENU Flow Chart

```
--SERVICE MENU--
1. Adjust Print
```

ADJUST PRINTING	MOVE HD 2 VERT	+UP
Head 2 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 3 VERT	+UP
Head 3 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 5 VERT	+UP
Head 5 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 6 VERT	+UP
Head 6 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 8 VERT	+UP
Head 8 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 9 VERT	+UP
Head 9 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 11 VERT	+UP
Head 11 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 12 VERT	+UP
Head 12 up down	*297 press test	-DOWN
ADJUST PRINTING	MOVE HD 2 <->	+LEFT
Head 2 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 3 <->	+LEFT
Head 3 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 5 <->	+LEFT
Head 5 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 6 <->	+LEFT
Head 6 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 8 <->	+LEFT
Head 8 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 9 <->	+LEFT
Head 9 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 11 <->	+LEFT
Head 11 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE HD 12 <->	+LEFT
Head 12 side to side	*23 press test	-RGHT
ADJUST PRINTING	MOVE BANK A <->	+RGHT
BANK A TO SENSOR	*05.000" test	-LEFT
ADJUST PRINTING	MOVE BANK B <->	+RGHT
BANK B TO SENSOR	*05.000" test	-LEFT
ADJUST PRINTING	MOVE BANK C <->	+RGHT
BANK C TO SENSOR	*05.000" test	-LEFT
ADJUST PRINTING	MOVE BANK D <->	+RGHT
BANK D TO SENSOR	*05.000" test	-LEFT

```
--SERVICE MENU--
2. Test System

debug
p     0.00 ips
```

```
--SERVICE MENU--
3. Test Display

abcdefghijklmnopqrst    scrolls for 3
ABCDEFGHIJKLMNOPQRST    seconds then stops
```

HEX CHART

MS B

DECIMAL		0	16	32	48	64	80	96	112
HEX		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
0	**0**	NUL	DLE	SP	0	@	P	`	p
1	**1**	SOH	DC1	!	1	A	Q	a	q
2	**2**	STX	DC2	"	2	B	R	b	r
3	**3**	ETX	DC3	#	3	C	S	c	s
4	**4**	EOT	DC4	$	4	D	T	d	t
5	**5**	ENQ	NAK	%	5	E	U	e	u
6	**6**	ACK	SYN	&	6	F	V	f	v
7	**7**	BEL	ETB	'	7	G	W	g	w
8	**8**	BS	CAN	(	8	H	X	h	x
9	**9**	HT	EM	)	9	I	Y	i	y
10	**A**	LF	SUB	*	:	J	Z	j	z
11	**B**	VT	ESC	+	;	K	(	k	{
12	**C**	FF	FS	,	<	L	\	l	|
13	**D**	CR	GS	-	=	M	)	m	}
14	**E**	SO	RS	.	>	N	^	n	~
15	**F**	SI	US	/	?	O	_	o	DEL

LSB (appears at left of row 5)

HEX CHART

Example: The capital letter A is a HEX 41. Find the letter A on the above chart, and look towards the top of the chart (MSB) and the locate the HEX number 4. Then look to the left side of the chart (LSB) and locate the Hex number 1. Therefore the HEX number is MSB 4 and LSB 1= 41.

Introduction

The OEM Industrial Printer emulates the listed PCL 5 printer command codes. The OEM Industrial Printer will virtually handle media as an HP1200 would using these printer commands. Additional printer commands have been added to allow control of special printer addressing functions and addressing needs.

The printer command codes are sets of characters that allow your computer software to override the Industrial Printer menu selections as fonts, print quality, etc. so customized address formats can be created.

PCL Command Codes

Code Name	Symbol	HEX Value	DEC Value	Description
Line Feed	<LF>	0A	10	Causes the printer to advance the paper one line at current line spacing.
Form Feed	<FF>	0C	12	Causes the printer to advance the paper to the next top of form.
Carriage Return	<CR>	0D	13	Causes the printer to move the current print position to the left margin. Does not cause a paper advance.
Escape	<←>	1B	27	Indicates to the printer that the characters immediately following are part of a printer command.
Space	<SP>	20	32	Causes the printer to move the current print position one character to the right.

Note: The order that PCL Commands are received can affect the performance of the printer. PCL commands sent in the wrong order may produce erratic and unanticipated results. The following is a quick guideline for what order to send the PCL commands. For more explicit details see a PCL 5 Printer Language Technical Reference Manual.

To setup a page using PCL commands the expected order is:

1. Reset (Esc E)
2. Page Orientation
3. Definition of a Page Size
4. Margins on the page
5. Definitions of a Font
      a. Select a font
      b. Set the Font Height
      c. Set the Font Pitch
6. Set the positioning commands

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Initialization				
Reset	←E	1B 45	027 069	Defines reset conditions
Hard Reset	←H	1B 48	027 072	Performs reset plus clears all permanent macros, fonts, and address recovery buffer
Page Control				
Page Size Default	←&l0A	1B 26 6C 30 41	027 038 108 048 065	#10 Envelope values
Page Size Executive	←&l1A	1B 26 6C 31 41	027 038 108 049 065	7.25 x 10.5 inches (18.3 x 26.7 cm)
Page Size Letter	←&l2A	1B 26 6C 32 41	027 038 108 050 065	8.5 x 11 inches (21.6 x 27.9 cm)
Page Size Legal	←&l3A	1B 26 6C 33 41	027 038 108 051 065	8.5 x 14 inches (21.6 x 35.6)
Page Size A4	←&l26A	1B 26 6C 32 36 41	027 038 108 050 054 065	210 x 297 mm
Page Size Mon Env	←&l80A	1B 26 6C 38 30 41	027 038 108 056 048 065	7.5 x 3.88 inches (19.1 x 9.9 cm)
Page Size #10 Env	←&l81A	1B 26 6C 38 31 41	027 038 108 056 049 065	9.5 x 4.1 inches (24.1 x 10.4 cm)
Page Size DL Env	←&l90A	1B 26 6C 39 30 41	027 038 108 057 048 065	220 x 110 mm
Page Size C5 Env	←&l91A	1B 26 6C 39 31 41	027 038 108 057 049 065	229 x 162 mm
Page Size B5 Env	←&l100A	1B 26 6C 31 30 30 41	027 038 108 049 048 048 065	238 x 104 mm
Page Size 9.4" x 15"	←&l101A	1B 26 6C 31 30 31 41	027 038 108 049 048 049 065	9.4 x 15 inches (23.9 x 38.1 cm)
Left Margin	←&a#L	1B 26 61 #..# 4C	027 038 097 #..# 076	# of Columns. Defined by current HMI.
Clear Horiz Margins	←9	1B 39	027 057	
Top Margin	←&l#E	1B 26 6C #..# 45	027 038 108 #..# 069	# of Dots from origin
Page Length ①	←&l#P	1B 26 6C #..# 50	027 038 108 #..# 080	# of Lines
Text Length	←&l#F	1B 26 6C #..# 46	027 038 108 #..# 070	# of Lines
Horiz Motion Index (HMI)	←&k#H	1B 26 6B #..# 48	027 038 107 #..# 072	# of 1/120 inch (1/47 cm)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Page Control				
Vertical Motion Index (VMI)	←&l#C	1B 26 6C #..# 43	027 038 108 #..# 067	# of 1/48 inch (1/19 cm)
Line Spacing	←&l#D	1B 26 6C #..# 44	027 038 108 #..# 068	# of lines per inch
Page Eject	←&l0H	1B 26 6C 30 48	027 038 108 048 072	
Heavy Media Mode OFF	←&l6H	1B 26 6C 36 48	027 038 108 054 072	Effects feed mode selection
Heavy Media Mode ON	←&l9H	1B 26 6C 39 48	027 038 108 057 072	Effects feed mode selection
Page Orientation	←&l0O	1B 26 6C 30 4F	027 038 108 048 079	Portrait
	←&l2O	1B 26 6C 32 4F	027 038 108 050 079	Reverse Portrait
Dry Hold Time	←&b#T	1B 26 62 #..# 54	027 038 098 #..# 084	Minimum time between pieces in 1/10 seconds. Specifies time from leading edge to leading edge. Dflt = 0. Max. = 300
Page Height	←+s#H	1B 2B 73 #..# 48	027 043 115 #..# 072	# = height in PCL units. (1/300 in.) (1/118 cm) Range of values is 1050 ... 4500 (3 to 15 in.) (7.62 to 38.1 cm).
Page Width ①	←+s#W	1B 2B 73 #..# 57	027 043 115 #..# 087	# = width in PCL units (1/300 in.) (1/118 cm) Range of values is 1500 .. 2820 (5 to 9.4 in.) (12.7 to 23.9 cm).
Cursor Positioning				
Horizontal Position	←&a#C	1B 26 61 #..# 43	027 038 097 #..# 067	Move to Column no.
	←*p#X	1B 2A 70 #..# 58	027 042 112 #..# 088	# of Dots
	←&a#H	1B 26 61 #..# 48	027 038 097 #..# 072	# of Decipoints (1/720 inch) (1/283 cm)
Vertical Position	←&a#R	1B 26 61 #..# 52	027 038 097 #..# 082	Move to Row no.
	←*p#Y	1B 2A 70 #..# 59	027 042 112 #..# 089	# of Dots
	←&a#V	1B 26 61 #..# 56	027 038 097 #..# 086	# of Decipoints (1/720 inch) (1/283 cm)
Half Line Feed	←=	1B 3D	027 061	Half of current VMI

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Cursor Positioning				
Line Termination	←&k#G			
	0	1B 26 6B 30 47	027 038 107 048 071	CR=CR, LF=LF, FF=FF
	1	1B 26 6B 31 47	027 038 107 049 071	CR=CR+LF, LF=LF, FF=FF
	2	1B 26 6B 32 47	027 038 107 050 071	CR=CR, LF=CR+LF, FF=CR+FF
	3	1B 26 6B 33 47	027 038 107 051 071	CR=CR+LF, LF=CR+LF, FF=CR+FF
Font Selection (Primary)				
Symbol Set	←(ID	1B 28 # .. #	027 040 # .. #	
	←(0D	1B 28 30 44	027 040 048 068	ISO 60 Norwegian ver 1
	←(0I	1B 28 30 49	027 040 048 073	ISO 15 Italian
	←(0N	1B 28 30 4E	027 040 048 078	ISO 8859
	←(0S	1B 28 30 53	027 040 048 083	ISO 11 Swedish
	←(0U	1B 28 30 55	027 040 048 085	ANSI ASCII
	←(1D	1B 28 31 44	027 040 049 068	ISO 61 Norwegian ver 2
	←(1E	1B 28 31 45	027 040 049 069	ISO 4 UK
	←(1F	1B 28 31 46	027 040 049 070	ISO 69 French
	←(1G	1B 28 31 47	027 040 049 071	ISO 21 German
	←(2S	1B 28 32 53	027 040 050 083	ISO 17 Spanish
	←(3S	1B 28 33 53	027 040 051 083	ISO 10 Swedish
	←(4S	1B 28 34 53	027 040 052 083	ISO 16 Portuguese
	←(8U	1B 28 38 55	027 040 056 085	Roman 8
	←(10U	1B 28 31 30 55	027 040 049 048 085	PC - 8
	←(12U	1B 28 31 32 55	027 040 049 050 085	PC 850
	←(19U	1B 28 31 39 55	027 040 049 057 085	Windows 3.1 Latin
Print Quality	←(s#Q			
	←(s0Q	1B 28 73 30 51	027 040 115 048 081	Quality = Draft
	←(s1Q	1B 28 73 31 51	027 040 115 049 081	Quality = Letter
	←(s2Q	1B 28 73 32 51	027 040 115 050 081	Quality = Executive
	←(s4Q	1B 28 73 34 51	027 040 115 052 081	Quality = Super Draft
Spacing ⑥	←(s#P			
	0	1B 28 73 30 50	027 040 115 048 080	Fixed Spacing
	1	1B 28 73 31 50	027 040 115 049 080	Proportional Spacing
Height	←(s#V	1B 28 73 #..# 56	027 040 115 #..# 086	Point Size #/72 inch (1/28 cm)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Font Selection (Primary)				
Style	←(s#S			
	0	1B 28 73 30 53	027 040 115 048 083	Upright
	1	1B 28 73 31 53	027 040 115 049 083	Italic
	2	1B 28 73 32 53	027 040 115 050 083	Expanded (150%)
	3	1B 28 73 33 53	027 040 115 051 083	Italic, Expanded (150%)
	4	1B 28 73 34 53	027 040 115 052 083	Thin (75%)
	5	1B 28 73 35 53	027 040 115 053 083	Italic, Thin (75%)
	8	1B 28 73 38 53	027 040 115 056 083	Condensed (50%)
	9	1B 28 73 39 53	027 040 115 057 083	Italic, Condensed (50%)
	16	1B 28 73 31 36 53	027 040 115 049 054 083	Wide (125%)
	17	1B 28 73 31 37 53	027 040 115 049 055 083	Italic, Wide (125%)
	32	1B 28 73 33 32 53	027 040 115 051 050 083	Hollow
	33	1B 28 73 33 33 53	027 040 115 051 051 083	Hollow, Italic
	34	1B 28 73 33 34 53	027 040 115 051 052 083	Hollow, Expanded (150%)
	35	1B 28 73 33 35 53	027 040 115 051 053 083	Hollow, Italic, Expanded (150%)
	36	1B 28 73 33 36 53	027 040 115 051 054 083	Hollow, Thin (75%)
	37	1B 28 73 33 37 53	027 040 115 051 055 083	Hollow, Italic, Thin (75%)
	40	1B 28 73 34 30 53	027 040 115 052 048 083	Hollow, Condensed (50%)
	41	1B 28 73 34 31 53	027 040 115 052 049 083	Hollow, Italic, Condensed (50%)
	48	1B 28 73 34 38 53	027 040 115 052 056 083	Hollow, Wide (125%)
	49	1B 28 73 34 39 53	027 040 115 052 057 083	Hollow, Italic, Wide (125%)
Stroke Weight	←(s#B			
	0	1B 28 73 30 42	027 040 115 048 066	Normal
	3	1B 28 73 33 42	027 040 115 051 066	Bold

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Font Selection (Primary)				
Typeface	←(s#T			
	3	1B 28 73 33 54	027 040 115 051 084	Courier
	4	1B 28 73 34 54	027 040 115 052 084	San Serif
	5	1B 28 73 35 54	027 040 115 053 084	Roman
	61440	1B 28 73 36 31 34 34 30 54	027 040 115 054 049 052 052 048 084	External (First)
	61441	1B 28 73 36 31 34 34 31 54	027 040 115 054 049 052 052 049 084	External (Second) If available
Font Selection				
Font Selection	←(#X	1B 28 #..# 58	027 040 #..# 088	Font ID # from download
Font Selection (Secondary)				
Symbol Set	←)ID	1B 29 # .. #	027 041 # .. #	
	←)0D	1B 29 30 44	027 041 048 068	ISO 60 Norwegian ver 1
	←)0I	1B 29 30 49	027 041 048 073	ISO 15 Italian
	←)0N	1B 29 30 4E	027 041 048 078	ISO 8859
	←)0S	1B 29 30 53	027 041 048 083	ISO 11 Swedish
	←)0U	1B 29 30 55	027 041 048 085	ANSI ASCII
	←)1D	1B 29 31 44	027 041 049 068	ISO 61 Norwegian ver 2
	←)1E	1B 29 31 45	027 041 049 069	ISO 4 UK
	←)1F	1B 29 31 46	027 041 049 070	ISO 69 French
	←)1G	1B 29 31 47	027 041 049 071	ISO 21 German
	←)2S	1B 29 32 53	027 041 050 083	ISO 17 Spanish
	←)3S	1B 29 33 53	027 041 051 083	ISO 10 Swedish
	←)4S	1B 29 34 53	027 041 052 083	ISO 16 Portuguese
	←)8U	1B 29 38 55	027 041 056 085	Roman 8
	←)10U	1B 29 31 30 55	027 041 049 048 085	PC - 8
	←)12U	1B 29 31 32 55	027 041 049 050 085	PC 850
	←)19U	1B 29 31 39 55	027 041 049 057 085	Windows 3.1 Latin
Print Quality	←)s#Q			
	←)s0Q	1B 29 73 30 51	027 041 115 048 081	Quality = Draft
	←)s1Q	1B 29 73 31 51	027 041 115 049 081	Quality = Letter
	←)s2Q	1B 29 73 32 51	027 041 115 050 081	Quality = Executive
Spacing ⑥	←)s#P			
	0	1B 29 73 30 50	027 041 115 048 080	Fixed Spacing
	1	1B 29 73 31 50	027 041 115 049 080	Proportional Spacing

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Font Selection (Secondary)				
Height	←)s#V	1B 29 73 #..# 56	027 041 115 #..# 086	Point Size #/72 inch (1/28 cm)
Style	←)s#S			
	0	1B 29 73 30 53	027 041 115 048 083	Upright
	1	1B 29 73 31 53	027 041 115 049 083	Italic
	2	1B 29 73 32 53	027 041 115 050 083	Expanded (150%)
	3	1B 29 73 33 53	027 041 115 051 083	Italic, Expanded (150%)
	4	1B 29 73 34 53	027 041 115 052 083	Thin (75%)
	5	1B 29 73 35 53	027 041 115 053 083	Italic, Thin (75%)
	8	1B 29 73 38 53	027 041 115 056 083	Condensed (50%)
	9	1B 29 73 39 53	027 041 115 057 083	Italic, Condensed (50%)
	16	1B 29 73 31 36 53	027 041 115 049 054 083	Wide (125%)
	17	1B 29 73 31 37 53	027 041 115 049 055 083	Italic, Wide (125%)
	32	1B 29 73 33 32 53	027 041 115 051 050 083	Hollow
	33	1B 29 73 33 33 53	027 041 115 051 051 083	Hollow, Italic
	34	1B 29 73 33 34 53	027 041 115 051 052 083	Hollow, Expanded (150%)
	35	1B 29 73 33 35 53	027 041 115 051 053 083	Hollow, Italic, Expanded (150%)
	36	1B 29 73 33 36 53	027 041 115 051 054 083	Hollow, Thin (75%)
	37	1B 29 73 33 37 53	027 041 115 051 055 083	Hollow, Italic, Thin (75%)
	40	1B 29 73 34 30 53	027 041 115 052 048 083	Hollow, Condensed (50%)
	41	1B 29 73 34 31 53	027 041 115 052 049 083	Hollow, Italic, Condensed (50%)
	48	1B 29 73 34 38 53	027 041 115 052 056 083	Hollow, Wide (125%)
	49	1B 29 73 34 39 53	027 041 115 052 057 083	Hollow, Italic, Wide (125%)
Stroke Weight	←)s#B			
	0	1B 29 73 30 42	027 041 115 048 066	Normal
	3	1B 29 73 33 42	027 041 115 051 066	Bold

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Font Selection (Secondary)				
Typeface	←)s#T			
	3	1B 29 73 33 54	027 041 115 051 084	Courier
	4	1B 29 73 34 54	027 041 115 052 084	San Serif
	5	1B 29 73 35 54	027 041 115 053 084	Roman
	61440	1B 29 73 36 31 34 34 30 54	027 041 115 054 049 052 052 048 084	External (First)
	61441	1B 29 73 36 31 34 34 31 54	027 041 115 054 049 052 052 049 084	External (Second) If available
Underline				
Underline	←&d#D			
Underline On	0	1B 26 64 30 44	027 038 100 48 068	
Underline On	3	1B 26 64 33 44	027 038 100 51 068	
Underline Off	←&d@	1B 26 64 40	027 038 100 064	
Macros ②				
Macro ID	←&f#Y	1B 26 66 #..# 59	027 038 102 #..# 089	# is macro ID
Macro Control	←&f#X			
	0	1B 26 66 30 58	027 038 102 048 088	Start macro definition (last ID specified)
	1	1B 26 66 31 58	027 038 102 049 088	Stop macro definition
	2	1B 26 66 32 58	027 038 102 050 088	Execute Macro (last ID specified). Use current modified print environment. Changes retained on completion
	3	1B 26 66 33 58	027 038 102 051 088	Call Macro (last ID specified). Use current modified print environment. Restore prior environment on completion.
	4	1B 26 66 34 58	027 038 102 052 088	Enable macro for auto overlay (last ID specified)
	5	1B 26 66 35 58	027 038 102 053 088	Disable auto overlay
	6	1B 26 66 36 58	027 038 102 054 088	Delete all Macros
	7	1B 26 66 37 58	027 038 102 055 088	Delete all temp macros
	8	1B 26 66 38 58	027 038 102 056 088	Delete Macro (last ID specified)
	9	1B 26 66 39 58	027 038 102 057 088	Make macro temp (last ID specified)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
	10	1B 26 66 31 30 58	027 038 102 049 048 088	Make macro perm (last ID specified)
Programming				
Hex Dump Mode ON	←Y	1B 59	027 089	Data printed as hex numbers, ESC and Control codes not executed.
Hex Dump Mode OFF	←Z	1B 5A	027 090	
Font Management				
Assign Font ID #	←*c#D	1B 2A 63 #..# 44	027 042 099 #..# 068	# is Font ID
Font Control	←*c#F			
	0	1B 2A 63 30 46	027 042 099 048 070	Delete all Fonts
	1	1B 2A 63 31 46	027 042 099 049 070	Delete temp fonts
	2	1B 2A 63 32 46	027 042 099 050 070	Delete last font
	3	1B 2A 63 33 46	027 042 099 051 070	Delete Character
	4	1B 2A 63 34 46	027 042 099 052 070	Make font temp
	5	1B 2A 63 35 46	027 042 099 053 070	Make font permanent
Soft Font Creation ③				
Font Descriptor	←)s#W [data]	1B 29 73 #..# 57 data	027 041 115 #..# 087 data	Laser Jet soft fonts are supported. These fonts always have a 64 byte descriptor. Desk Jet fonts are not supported.
Character Code	←*c#E	1B 2A 63 #..# 45	027 042 099 #..# 069	ASCII code no.
Download Character	←(s#W [data]	1B 28 73 #..# 57 data	027 040 115 #..# 087 data	
Raster Graphics				
Raster Graphics Compression	←*b#M			
	0	1B 2A 62 30 4D	027 042 098 048 077	Uncompressed format
	2	1B 2A 62 32 4D	027 042 098 050 077	TIFF format
	3	1B 2A 62 33 4D	027 042 098 051 077	Delta Row compression
	4	1B 2A 62 34 4D	027 042 098 052 077	Reserved
Transfer graphics by plane	←*b #V	1B 2A 62 # 56 [data]	027 042 098 # 086 [data]	
Transfer Raster Graphics data	←*b#W [data]	1B 2A 62 #..# 57 [data]	027 042 098 #..# 087 [data]	Number of bytes
Raster Y Offset	←*b #Y [data]	1B 2A 62 #..# 59 [data]	027 042 098 #..# 089 [data]	Number of dots

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Start Raster Graphics	←*r#A			
	0	1B 2A 72 30 41	027 042 114 048 065	Place to left most position
	1	1B 2A 72 31 41	027 042 114 049 065	Place at current position
End Raster Graphics				
	←*rB	1B 2A 72 42	027 042 114 066	
	←*rC	1B 2A 72 43	027 042 114 067	Resets left margin to 0
Set Raster Graphics Width	←*r#S	1B 2A 72 #..# 53	027 042 114 #..# 083	Set number of pixels
Set Raster Graphics Height	←*r#T	1B 2A 72 # 54	027 042 114 # 084	Height is raster rows
Simple Color	←*r#U			
Black pallet	1	1B 2A 72 31 55	027 042 114 049 085	1 plane
Raster Graphics Resolution	←*t#R			
	75	1B 2A 72 37 35 52	027 042 116 055 055 082	75 dots per inch
	150	1B 2A 72 31 35 30 52	027 042 116 049 053 048 082	150 dots per inch
	300	1B 2A 72 33 30 30 52	027 042 116 051 048 048 082	300 dots per inch

① The Page Width & Page Length printer commands function like the Page Size command. Using these commands automatically enables Page Eject and disables overlay macros. Both the Page Width and Page Length commands can be used independently and will only change the width or length to the maximum allowable page size of 9.4 x 15 inches (23.9 x 38.1 cm). Setting the cursor positioning commands, margin settings, print data, etc. to cause printing beyond the pages size dimensions will be cropped.

② Only one overlay macro can be used at a time, and cannot be recursive. The overlay macros need print quality, page parameters, etc. to determine the printers' page setup.

③ Soft font creation is in HP non compressed Bit Map Font Format.

⑥ The resident fonts are scaleable from 8 to 30 points. If a desired font spacing does not match the font selected an internal font will be substituted. For fixed spacing the substitute font will be Courier, and Sans Serif for proportionally spaced fonts. Characteristics of the font being replaced, such as point size, print width, etc., will be matched by the substituted font.

To determine page size or cusor movement in Dots multiply by <u>300 Dots /inch</u> (2.54 cm) for Horizontal and <u>300 Dots /inch</u> (2.54 cm) for Vertical. Example: a Letter size page of 8.5 x 11 inches (21.6 x 27.9 cm) is 2550 x 3300 Dots

PCL parameterized escape sequences

To utilize the OEM Industrial Printers internal bar-coding features, records are searched for a valid ZIP, ZIP + 4, Delivery Point Bar Code (DPBC) or DPBC with a check sum. For ZIP + 4 or a 11 digit DPBC, a checksum is computed for printing a USPS Postnet bar-code with framing bars. The position of the Postnet bar-code is determined by the printers menu setup or the bar-code location commands in effect. Bar-codes will not be printed outside of the printers' Page Size setup.

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Bar Code				
Non - address data markers ④	←+b#A			Marks data that is not part of destination address.
	1	1B 2B 62 31 41	027 043 098 49 065	marks the end of non-address data
	2	1B 2B 62 32 41	027 043 098 50 065	marks the beginning of the non-address data.
5 Digit Bar Codes	←+b#D			
	0	1B 2B 62 30 44	027 043 098 048 068	Don't print 5 Digit Bar Codes
	1	1B 2B 62 31 44	027 043 098 049 068	Print all Bar Codes for zip, zip + 4, and DPBC.
Bar Code	←+b#E			
	0	1B 2B 62 30 45	027 043 098 048 069	Disable Bar Code
	1	1B 2B 62 31 45	027 043 098 049 069	Enable Bar Code
Bar Code - Horizontal	←+b#H	1B 2B 62 #..# 48	027 043 098 #..# 072	# of Decipoints (1/720 inch) (1/283 cm)
Bar Code Placement	←+b#P	1B 2B 62 #..# 50	027 043 098 #..# 080	Distance in 1/10 inch (1/4 cm) units from right edge of media. Value of 0 indicates edge of media
	0	1B 2B 62 30 50	027 043 098 048 080	Bar Code in lower right (default position)
	1	1B 2B 62 31 50	027 043 098 049 080	Bar Code above address
	2	1B 2B 62 32 50	027 043 098 050 080	Bar Code below address
⑦	3	1B 2B 62 33 50	027 043 098 051 080	Print Bar Code at specified horizontal & vertical position, otherwise print Bar Code in default position

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Bar Code				
Bar Code - Vertical	←+b#V	1B 2B 62 #..# 56	027 043 098 #..# 086	VMI # in Decipoints (1/720 inch) from bottom of page to bottom of bar-code
ZIP Code command Bar Code -⑤	←+b#Znnn	1B 2B 62 #..# 5A nnn	027 043 098 #..# 090 nnn	#= number of characters in the ZIP Code string. n = the ASCII representation of the ZIP code string.
	←+b5Z nnnnn	1B 2B 62 35 5A nnnnn	027 043 098 053 090 nnnnn	n = the ASCII representation of the ZIP code string. Must contain 5 digits.
	←+b9Z nnnnnnnnn	1B 2B 62 39 5A nnnnnnnnn	027 043 098 057 090 nnnnnnnnn	n = the ASCII representation of the ZIP code string. Must contain 9 digits.
	←+b11Z nnnnnnnnnn n	1B 2B 62 31 31 5A nnnnnnnnnnn	027 043 098 49 49 090 nnnnnnnnnnn	n = the ASCII representation of the ZIP code string. Must contain 11 digits.
	←+b12Z nnnnnnnnnn nn	1B 2B 62 31 32 5A nnnnnnnnnnnn	027 043 098 049 050 090 nnnnnnnnnnnn	n = the ASCII representation of the ZIP code string. Must contain 12 digits.

④ Use a pair of escape sequences, the first one before the data that is not part of the destination address such as return addresses, graphics, messages, etc. and the other to mark the end.

⑤ Use Zip Code command when two ZIP codes are being sent. The first ZIP code will be printed without a bar-code. The second ZIP code in the Zip Code command string will print a corresponding bar-code but not print the ZIP code. The Zip Code command only overrides the bar-code command for the present address.

⑦ Use the ←+b#H and ←+b#V commands to position the bar code. Measure the position from the right-hand corner of the leading edge of the media, not the upper left-hand corner.

OEM CHARACTER SET
(Modeled after PC 850 Character Table)

0 / 0	16	\<SP\> 32	0 / 48	@ 64	P 80	` 96	p 112	Ç 128	É 144	á 160	░ 176	└ 192	ð 208	Ó 224	240
1 / 1	17	! 33	1 / 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	▒ 177	┴ 193	Ð 209	ß 225	± 241
2 / 2	18	" 34	2 / 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	▓ 178	┬ 194	Ê 210	Ô 226	242
3 / 3	19	# 35	3 / 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	│ 179	├ 195	Ë 211	Ò 227	243
4 / 4	20	$ 36	4 / 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	┤ 180	─ 196	È 212	õ 228	¶ 244
5 / 5	21	% 37	5 / 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	Á 181	┼ 197	213	Õ 229	§ 245
6 / 6	22	& 38	6 / 54	F 70	V 86	f 102	v 118	å 134	û 150	ª 166	Â 182	ã 198	Í 214	µ 230	246
7 / 7	23	' 39	7 / 55	G 71	W 87	g 103	w 119	ç 135	ù 151	º 167	À 183	Ã 199	Î 215	þ 231	247
8 / 8	24	(40	8 / 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	¿ 168	© 184	╚ 200	Ï 216	Þ 232	° 248
9 / 9	25	) 41	9 / 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	® 169	╣ 185	╔ 201	217	Ú 233	¨ 249
\<LF\> 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	¬ 170	║ 186	╩ 202	┌ 218	Û 234	• 250
\<ESC\> 11	27	+ 43	; 59	K 75	[91	k 107	{ 123	ï 139	ø 155	½ 171	╗ 187	╦ 203	█ 219	Ù 235	251
\<FF\> 12	28	, 44	< 60	L 76	\ 92	l 108	| 124	î 140	£ 156	¼ 172	╝ 188	╠ 204	▄ 220	236	252
\<CR\> 13	29	- 45	= 61	M 77	] 93	m 109	} 125	ì 141	Ø 157	¡ 173	¢ 189	═ 205	| 221	237	253
14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	Ä 142	× 158	« 174	¥ 190	╬ 206	Ì 222	238	254
15	31	/ 47	? 63	O 79	_ 95	o 111	127	Å 143	ƒ 159	» 175	┐ 191	¤ 207	▀ 223	´ 239	™ 255

International Character Substitution

The following industry standard character substitution techniques are utilized:

ISO #	Character Set Name	ID #	35	36	64	91	92	93	94	96	123	124	125	126
6	ANSI ASCII	0U	#	$	@	[	\	]	^	`	{	|	}	~
69	French	1F	£	$	à	°	ç	§	^	µ	é	ù	è	¨
21	German	1G	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
4	United Kingdom	1E	£	$	@	[	\	]	^	`	{	|	}	¯
60	Norwegian/Danish	0D	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	¯
11	Swedish/Finnish	0S	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
15	Italian	0I	£	$	§	°	ç	é	^	ù	à	ò	è	ì
17	Spanish	2S	£	$	§	¡	Ñ	¿	^	`	°	ñ	ç	~
61	Norwegian/Danish	1D	§	$	@	Æ	Ø	Å	^	`	æ	ø	å	|
16	Portuguese	4S	#	$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
10	Swedish	3S	#	¤	@	Ä	Ö	Å	^	`	ä	ö	å	¯

OEM CHARACTER SET
(Modeled after 8859 Latin Character Table)

0	16	<SP> 32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Ð 208	à 224	õ 240
1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	¡ 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	146	¢ 162	178	Â 194	Ò 210	â 226	ò 242
3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	£ 163	179	Ã 195	Ó 211	ã 227	ó 243
4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	23	' 39	7 55	G 71	W 87	g 103	w 119	135	151	§ 167	· 183	Ç 199	215	ç 231	247
8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	© 169	185	É 201	Ù 217	é 233	ù 249
<LF> 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	ª 170	186	Ê 202	Ú 218	ê 234	ú 250
<ESC> 11	27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
<FF> 12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	172	188	Ì 204	Ü 220	ì 236	ü 252
<CR> 13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	173	½ 189	Í 205	221	í 237	253
14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	190	Î 206	Þ 222	î 238	þ 254
15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	159	¯ 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

The ID# for the ISO 8859 Character Set is (0N).

OEM CHARACTER SET
(Modeled after Roman -8 Character Table)

0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
0	16	`<SP>` 32	0 48	@ 64	P 80	` 96	p 112	128	144	160	¯ 176	â 192	Å 208	Á 224	þ 240
1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	À 161	177	ê 193	î 209	Ã 225	Þ 241
2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	146	Â 162	178	ô 194	Ø 210	ã 226	· 242
3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	È 163	° 179	û 195	Æ 211	Ð 227	µ 243
4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	Ê 164	Ç 180	á 196	å 212	ð 228	¶ 244
5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	Ë 165	ç 181	é 197	í 213	Í 229	245
6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	Î 166	Ñ 182	ó 198	ø 214	Ì 230	– 246
7	23	' 39	7 55	G 71	W 87	g 103	w 119	135	151	Ï 167	ñ 183	ú 199	æ 215	Ó 231	247
8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	´ 168	¡ 184	à 200	Ä 216	Ò 232	½ 248
9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	169	¿ 185	è 201	ì 217	Õ 233	ª 249
`<LF>` 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	^ 170	¤ 186	ò 202	Ö 218	õ 234	º 250
11	`<ESC>` 27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	¨ 171	£ 187	ù 203	Ü 219	Š 235	« 251
`<FF>` 12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	172	¥ 188	ä 204	É 220	š 236	252
`<CR>` 13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	Ù 173	§ 189	ë 205	ï 221	Ú 237	» 253
14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	Û 174	ƒ 190	ö 206	ß 222	Ÿ 238	± 254
15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	159	£ 175	¢ 191	ü 207	Ö 223	ÿ 239	255

The ID# for the Roman 8 Character Set is (8U).

OEM CHARACTER SET
(Modeled after Windows 3.1 Latin Character Table)

0	16	<SP> 32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Ð 208	à 224	ð 240
1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	¡ 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	18	" 34	2 50	B 66	R 82	b 98	r 114	, 130	146	¢ 162	178	Â 194	Ò 210	â 226	ò 242
3	19	# 35	3 51	C 67	S 83	c 99	s 115	f 131	" 147	£ 163	179	Ã 195	Ó 211	ã 227	ó 243
4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	" 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	– 150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	23	' 39	7 55	G 71	W 87	g 103	w 119	135	— 151	§ 167	· 183	Ç 199	215	ç 231	247
8	24	(40	8 56	H 72	X 88	h 104	x 120	^ 136	152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	™ 153	© 169	185	É 201	Ù 217	é 233	ù 249
<LF> 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	Š 138	š 154	ª 170	186	Ê 202	Ú 218	ê 234	ú 250
<ESC> 11 27		+ 43	; 59	K 75	[91	k 107	{ 123	139	155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
<FF> 12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	¬ 172	188	Ì 204	Ü 220	ì 236	ü 252
<CR> 13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	- 173	½ 189	Í 205	221	í 237	253
14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	190	Î 206	Þ 222	î 238	þ 254
15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	Ÿ 159	¯ 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

The ID# for the Windows 3.1 Latin Character Set is (19U).
The Windows 3.1 Latin symbol set is recommended to use when running Microsoft Windows 3.1 / Windows 95.

OEM CHARACTER SET
(Modeled after PC - 8 Character Table)

0 / 16	1 / 17	2 / 18	3 / 19

0	16	<SP> 32	0 48	@ 64	P 80	` 96	p 112	Ç 128	É 144	á 160	░ 176	└ 192	208	224	. 240
1	17	! 33	1 49	A 65	Q 81	a 97	q 113	ü 129	æ 145	í 161	▒ 177	⊥ 193	209	225	± 241
2	18	" 34	2 50	B 66	R 82	b 98	r 114	é 130	Æ 146	ó 162	▓ 178	┬ 194	210	226	242
3	19	# 35	3 51	C 67	S 83	c 99	s 115	â 131	ô 147	ú 163	│ 179	├ 195	211	227	243
4	20	$ 36	4 52	D 68	T 84	d 100	t 116	ä 132	ö 148	ñ 164	┤ 180	─ 196	212	228	244
5	21	% 37	5 53	E 69	U 85	e 101	u 117	à 133	ò 149	Ñ 165	181	┼ 197	213	229	245
6	22	& 38	6 54	F 70	V 86	f 102	v 118	å 134	û 150	ª 166	182	198	214	µ 230	246
7	23	' 39	7 55	G 71	W 87	g 103	w 119	ç 135	ù 151	º 167	183	199	215	231	247
8	24	(40	8 56	H 72	X 88	h 104	x 120	ê 136	ÿ 152	¿ 168	184	╚ 200	216	232	° 248
9	25	) 41	9 57	I 73	Y 89	i 105	y 121	ë 137	Ö 153	169	╣ 185	╔ 201	217	233	• 249
<LF> 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	è 138	Ü 154	170	║ 186	╩ 202	┌ 218	234	• 250
11	<ESC> 27	+ 43	; 59	K 75	[91	k 107	{ 123	ï 139	¢ 155	½ 171	╗ 187	╦ 203	■ 219	235	251
<FF> 12	28	, 44	< 60	L 76	\ 92	l 108		124	î 140	£ 156	172	╝ 188	╟ 204	■ 220	236	252
<CR> 13	29	- 45	= 61	M 77	] 93	m 109	} 125	ì 141	¥ 157	¡ 173	189	= 205	221	237	253
14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	Ä 142	158	« 174	190	╫ 206	222	238	254
15	31	/ 47	? 63	O 79	_ 95	o 111	127	Å 143	ƒ 159	» 175	┐ 191	207	■ 223	239	255

The ID# for the PC 8 Character Set is (10U).

The parallel interface port is a standard 36 pin Amphenol type with two metal wire retaining clips.

Pin #	Signal	Direction	Description
1	Strobe	In	A Low pulse causes the printer to read one byte of data
2-9	Data 0 -Data7	In	Data lines. Data 0 is the LSB
10	Acknowledge	Out	The printer sends a low pulse to indicate that it has accepted a byte of data and is ready for more.
11	Busy	Out	The printer sends a High to indicate that it cannot receive data to data entry, a full buffer.
12	Paper Error	Out	The printer sends a High logic level to indicate to the computer that it is out of paper.
13	On Line	Out	The printer sends a High logic level to indicate to the computer that it is in an On Line status.
16	Sig Gnd		These pins are tied to signal ground
17	Chassis Gnd		Chassis Ground
18	HI	Out	The printer outputs a High logic level (+5V through a 2.2K ohm resister) on this pin while it is turned on.
19-30	Sig Gnd	In	Signal Interface Ground
31	Reset /Input Prime		The printer may not work when this line is low.
32	Error	Out	The printer sends a Low logic level to the printer to indicate that it is in an error state.

Parallel Communication (Centronics Cable)
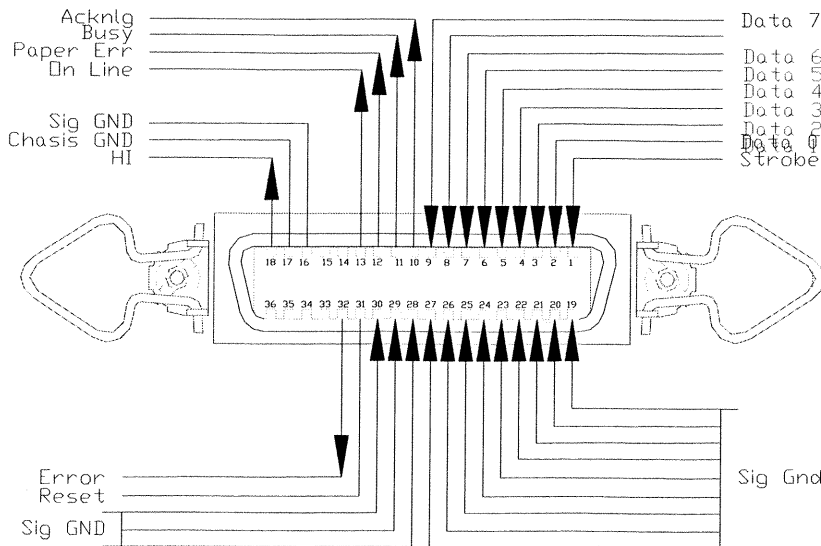
The Accessory Port allows the printer to work in conjunction with a Diverter Arm, a Feeding Device and a variable Speed Conveyor. Use the Accessory Port to connect the printer to either one or all of these devices.

To connect and operate the Diverter Arm signal see Diverter Control section in the Setup menu.

To connect and operate the Conveyor Speedup signal see the Conveyor Distance menu in the Postal Bundle Brk (Break) menu.
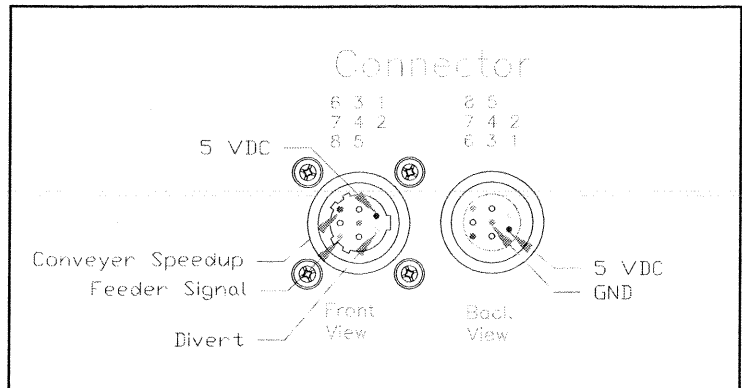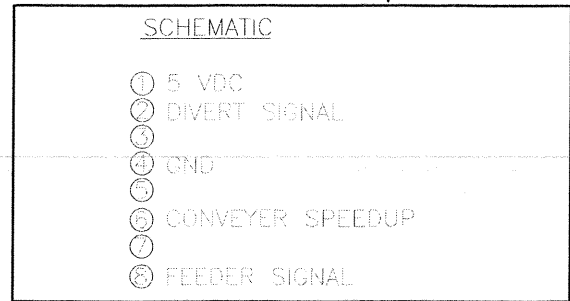
The feeder portion of the port will stop the feeder when the printer has received the last piece to print. Use the Feeder Signal to stop the feeder from sending blank pieces after the printer has finished printing.

The printer will send a 40 millisecond pulse signal to stop the feeder only if:

1) The printer is On-Line.

2) The last record has been received and no new data is coming or being received.

3) The last piece to print has passed the Sensor Assembly.

Use the Cable Assembly Schematic to set up a 5 volt DC relay for Pin 1 and Pin 2 and a relay for Pin 1 and Pin 6.

Accessory Port:

SCHEMATIC

① 5 VDC
② DIVERT SIGNAL
③
④ GND
⑤
⑥ CONVEYER SPEEDUP
⑦
⑧ FEEDER SIGNAL

Connector

5 VDC

6 3 1   8 6
7 4 2   7 4 2
8 6   6 3 1

Conveyer Speedup
Feeder Signal

5 VDC
GND

Divert

Front View   Back View

Note: Place the Sensor Assembly close to the Feeder Assembly t the number of blank pieces tha onto the transport due to inert

	DB25			DB 9	
CHS GND	1	Shield			
TXD	2			2	RXD
RXD	3			3	TXD
CTS	5			4	DTR
DSR	6			6	DSR
DTR	20			8	CTS
SIG GND	7			5	SIG GND

PRINTER   COMPUTER

	DB25		DB25	
CHS GND	1		1	CHS GND
TXD	2		3	RXD
RXD	3		2	TXD
CTS	5		20	DTR
DSR	6		7	SIG GND
SIG GND	7		5	CTS
DTR	20		6	DSR
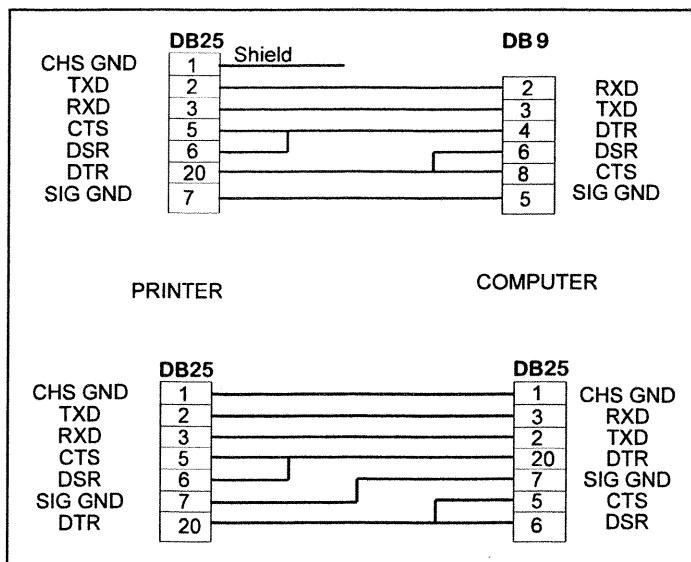
Serial Communication (RS - 232 C) connections for the Industrial Printer

Software Table of Contents

Software Setup

This section will help in setting up the Address Printer to run programs in Windows 3.1 and DOS. Some assistance is given for use on the Apple and Macintosh. If you are using Windows 95 / 98 or Window NT 4.0 use the OEM driver installation disk that is included in the accessories kit.

Generic Software Driver Information

Most software packages allow you to select or setup a printer driver. Use one of the following printer drivers.

Dumb Printer

Generic Printer

Typewriter

Plain Vanilla

Teletype

TTYCRLF Printer

TTYCR Printer   (This requires the Setup Menu CR = CR + LF option to be turned on)

If none of these choices are available one of the following may work:

HP Laserjet Series II or any Laserjet II listed (excluding Postscript)

HP Laserjet 4

DOS Text Printer

Don't forget to set the MODE COMMAND!!!

Type the MODE command at the DOS prompt or add the MODE command to the AUTOEXEC.BAT file. The AUTOEXEC.BAT will load the command when the computer is first booted up.

Example:

When printing to the parallel port load MODE LPT1:,,P

When printing to the serial port load MODE COM1:9600,N,8,1,P

(**NOTE:** The printer ports or parameter settings may vary from the preceding MODE command examples. If using DOS version 5.0, a ,,B may be substituted for the ,,P)

MICROSOFT WINDOWS™ Applications Software Driver Information

Microsoft Windows Software Driver Information

When using Microsoft Windows 3.0 or later, select the Generic / Text printer driver.

Microsoft Windows95/98 Software Driver Information

Changing the Print Driver Properties might have to be made for the printer to work with different software packages in the Windows95/98 operating environment.

1. Click START ... SETTINGS... PRINTERS

2. Highlight the printer driver being used (usually 9K-L / 24K / OEM)

3. Click FILE ... PROPERTIES

4. Click on the DETAILS tab

5. Click on PORT SETTING ... make sure that none of the boxes are checked. Click on OK

6. Click on SPOOL SETTING... check the box for "Print directly to printer".

7. Check the box for "Disable bi-directional support for this printer". Click on OK.

8. Check the GRAPHICS tab when pictures are missing or printed out incorrectly. **Note:** Some software may require clicking on an OPTIONS button to open a dialog box of check boxes options.

9. Click on APPLY once settings are correct.
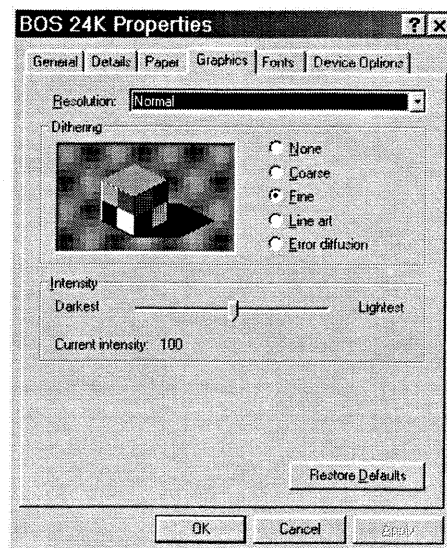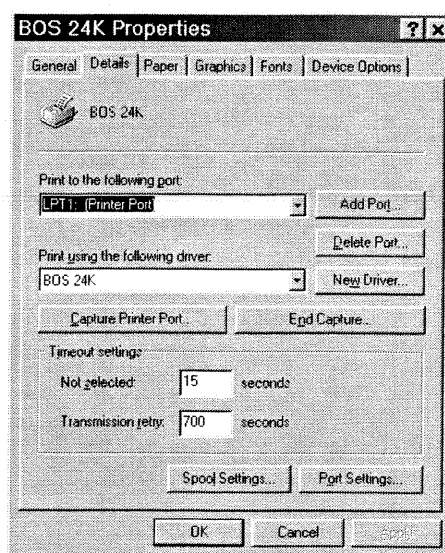
Updating the Printer Software

Periodically updates of printer drivers are made available on the World Wide Web. To obtain updates go to http://www.BryceUSA.com.

Software Interface sample: **AccuZIP 6 for Windows**

Installation:

Follow the instructions in the User Manual to install Accuzip 6.

Choose **Print Setup** from the File Menu.

The **Print Setup**
    window will be
    displayed.
Select the
Generic/Text
Only printer.
Click on **OK**

Choose **Print** from
the File Menu, then
select **Labels**.
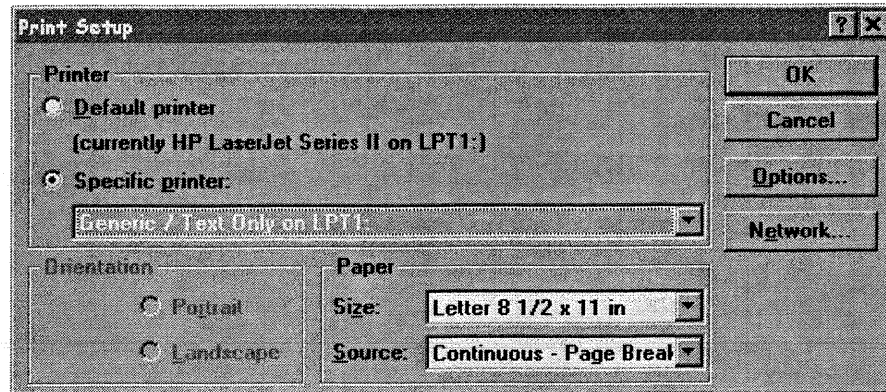
The **Print Labels**
    window will be
    displayed.
Select the desired
option
Click on **Continue**.
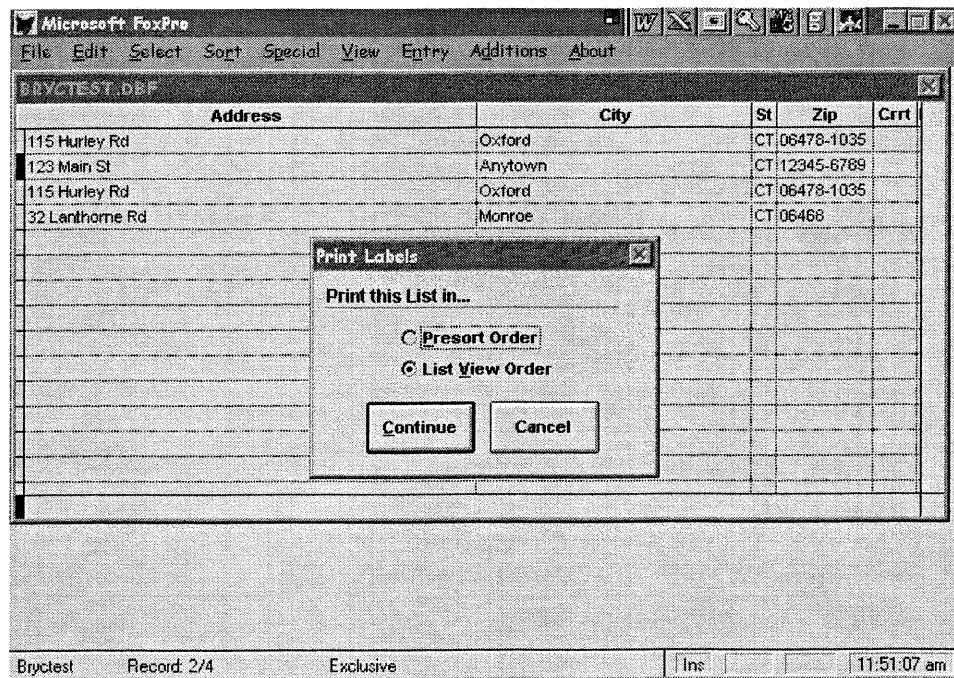
The **Print** window will be displayed. Select **Label Format**.
Ensure that there is not a check in the **Print Barcode** box.
Select the BRYCE.LBX label template.

Select **Continue**.
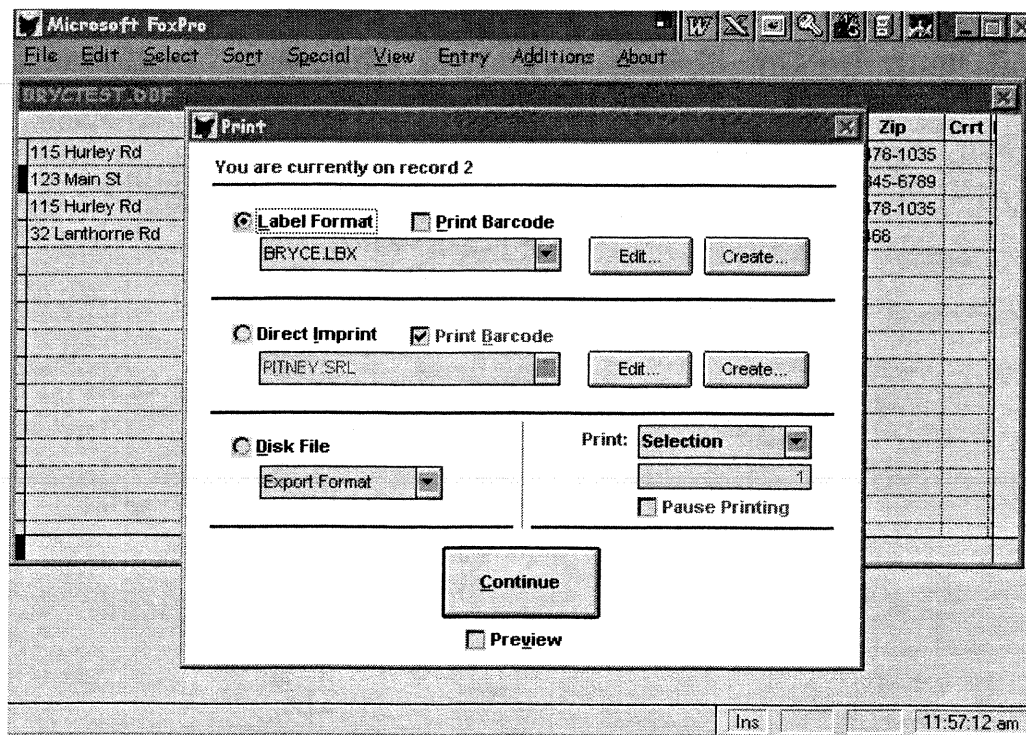
Another **Print** window will be displayed.
Ensure that the Generic/Text Only is the selected printer.
Choose the desired **Print range**.
NOTE:
1. Set the address setup option, in the Bryce setup menu, to 8 lines.
1. Ignore the print quality selection that is displayed in the Print quality section of the Print window. The print quality you desire can be set in the Bryce Main Menu under the **Print Quality** option.
Select **OK** to print to your Bryce Address printer.
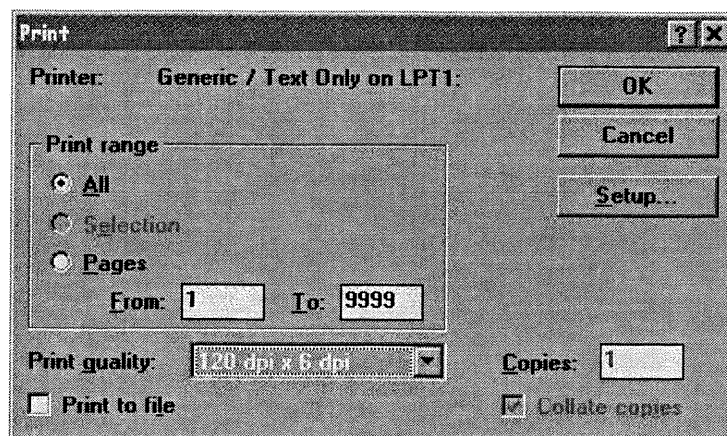
Software interface sample: **ARCLIST ver. 2.06**

The Arclist program must be configured for use by the Bryce BOS OEM in terms of both printer type selection and output type selection.

You must first identify the Bryce BOS OEM printer.
       Run Arclist program called CONFIG.
       Choose PRINTER from menu, then choose CUSTOM from menu, then type Bryce BOS OEM as printer.
When this information is entered, a PORT menu will be displayed.
       Select appropriate port, and characteristics if using a serial port.
NOTE: The BOS OEM must have the same port characteristics as the computer port.
       All special entries (line feed, fonts, etc.) should be left blank.
       Select SAVE from menu, then choose OKAY from menu.
       Select QUIT from menu, then choose SAVE from menu.

Next identify the address format.
       Run ARCLIST.
       Select LABELS from menu, then choose PRINT from menu, use the arrow keys to select a format.
       Select Bryce BOS OEM .
       Enter data according to the table below.

> **Title: Bryce BOS OEM**
> **Label Type: envelope**
> **Pitch: pica**
> **Font: Normal**
> **Line Feed: Normal**
> **Left Margin: 0**
> **Label width in chars: 42**
> **Lines per label: 8**
> **Top Margin: 0**
> **Labels Down: N/A**
> **Lines Between Labels: N/A**
> **Labels Across: N/A**
> **Space Between Labels: N/A**
>
> **Criteria: All**
> **Index: Record**
> **Order: Ascending**
> **Printer: Bryce BOS 10K**

       Select ALL or Nth
       Select INDEX or PRESORT
       Select DEFAULT from Printer Menu
       Select NON-STOP or PAUSE
       Select GO from Printer menu
Print Mailing Labels
NOTE: To pause program while printing, press ESC on Computer Keyboard instead of turning off the
       On-Line light on the BOS OEM.

Software Interface sample: **Bulk Mailer + 4.20i for Windows**

Installation:

Follow the instructions in the User Manual to install Bulk Mailer.

Select **New** from the File Menu.
Follow the instructions in the Users Manual on how to enter your address information.
When you are ready to print addresses;

Select **Direct Format** from the Report Menu.

Select **Edit Report** from the Format Menu.
Move the fields to the upper left corner of the mail piece, as shown below.
Select **Preview Report** from the Format Menu.
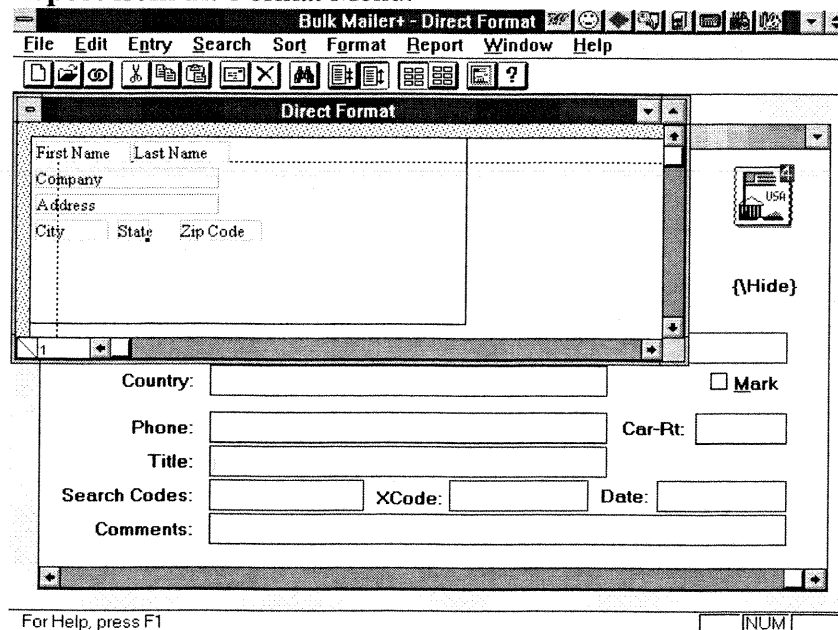
Select **Print Setup** from the File Menu.
Select the **Generic / Text Only** printer driver, as shown below.
Click on **OK**.
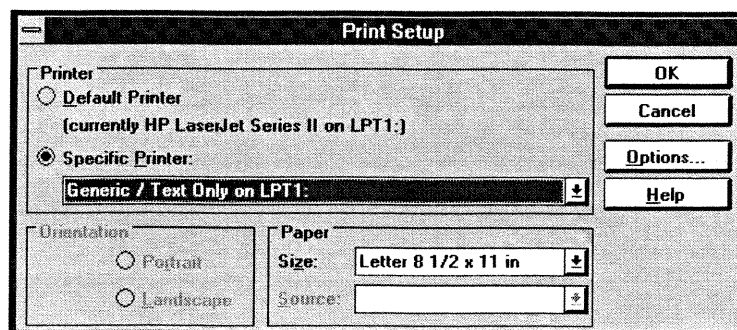
continued on next page

Select **Print Direct** from the File Menu.
Select the **Bryce printer** from the Print Direct Window (shown below).
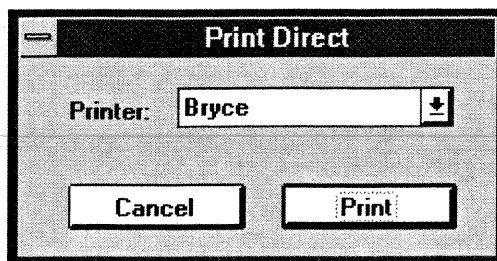
```
┌─────────────────────────────────────┐
│ ▬          Print Direct              │
│                                      │
│   Printer:  │Bryce              │ ±│ │
│                                      │
│        ┌──────────┐   ┌──────────┐   │
│        │  Cancel  │   │  Print   │   │
│        └──────────┘   └──────────┘   │
└─────────────────────────────────────┘
```

Set the ADDRESS SETUP, located in the Bryce printers Setup Menu, to 8 lines.

You are now ready to print.

Software interface sample: **DATAPERFECT ver 2.2**

Refer to the DataPerfect Reference Manual to setup a database for printing labels.

While using DataPerfect, a label must be defined in order to print your addresses on the BOS OEM.

Be sure the cursor is in the panel from which you want to run the report.

Press **Report/Export (Shift-F7)** to access the report list.

With the cursor on Built-In Short Reports, press **Insert** to create a new report.

Select **Edit Report Name (9)**, then enter the desired report name (for example, BOS OEM C Label). If you want to send report to the BOS OEM, select **Printer On/Off (1), then type in the appropriate port number.**

> Select **Print Margins (7)**, then enter the following data:
> **Top**   **0**
> **Bottom**   **0**
> **Left**   **0**
> **Text Lines**   **7**

Select **Edit Report Form (8).**

Move the cursor to the Report Body section of the report form, then press **Report Options (Ctrl-F7)**.

Select **Labels (5)**.

Enter **1** as the number of labels across the page.

Enter **45** as the width in characters of each label.

Enter **7** as the number of lines per label.

The code for the label specifications is displayed in the Report Body section.

Use **Select (F4)** to select the fields needed for the labels. Be sure that the alphanumeric fields are edited to include the :;T print mode indicator. (See Field Format, Print Mode Indicators in your Reference Manual).

Press **Exit (F7)** or **Save (F10)** to save the report form when you have completed selecting fields. You will return to the Report Menu.

Set the **ADDRESS SETUP** in the BOS OEM SETUP MENU to **7 lines.**
You are now ready to print addresses on your BOS OEM.
Press Report/Export (Shift-F7) to run the report.

Software Interface sample: **dBASE IV ver 1.0**

Upon entering dBASE, the **dBASE Control Panel** will be displayed.
To Create a Label, move cursor to the **labels** column and select **<create>**.
A label will be displayed on the screen.
Press **ALT & D**, to pull down the Dimensions menu, the following settings should be entered;

Width of label	**45**
Height of label	**Set to the number of lines in your address**
Indentation	**0**
Lines between labels	**1**
Space between columns	**1**
Columns of labels	**1**

Press **ESC**
Add fields to label using the instructions at the bottom of the screen.
Once you have completed your layout, press **ALT & L** to pull down the Layout menu and **select;**
      Save this label design.
When this label format is saved, it will be displayed as a file under the labels column in the control panel.
To Print labels;
Activate a data file;
Select the label file you created under the labels column;
Follow menu directions to print.

NOTE: dBase IV does a CR & LF before each address, therefore you must do the following:
      IF SEVEN LINE ADDRESS, DO A FF BEFORE THE START OF THE NAME,
      Example   <CR> <LF>
      CHR(12)+NAME

Software interface sample: **FILE EXPRESS ver. 5.1**

When using **FILE EXPRESS**, A label must be defined in order to print your addresses on the BOS OEM.

Select **Label Printing (6)** from the Main Menu.
Select **Design a New Label** from Label Menu.
Enter Data into the Label Spacing Screen according to the following table:

1	How many labels across the page (1-5)	1
2	Spaces across from label to label (10-500)	n/a
3	Lines down from label to label (1-999)	7
4	Printable lines on each label (1-250)	7
5	Characters per line on each label (10-999)	45
6	Tab position to first label (1-99)	1

When you have completed entering this data, **press F10 to accept these changes.**
A Test Printer Screen will be displayed, if you would like to test this setup press Y, if not press N.

File Express will display a label box on the screen the size that was specified on the Label Spacing Screen.

Type **ALT-F** to pop up field window.
Move highlight bar to the field you would like on the first line of your label.
Press Enter twice, to accept it as a field only.
Repeat the above sequence to place your fields in the appropriate locations.
When you are finished designing your label, **press F10**.

The Record Selection Screen will be displayed. Press **Enter**.

The Label Sub Menu will be displayed.
Select **S** (to select save option).
Press **Enter** (to confirm you want to save).
Type in a name for your label.
Press **Enter.**
Type a description for you label.
Press **Enter (to save your label layout)**

While you are in the Label Sub Menu, now would be a good time to specify a printer.
   Press **7** to update printer options.
   Press **Enter**
   Press **ALT-S** to select a printer definition file.
   Select **POSTSCRIPT - Generic.**, and press Enter.

CONTINUED ON NEXT PAGE

FILE EXPRESS ver 5.1 continued

The Printer Option Menu will be displayed, **enter the following data:**

1	**Printer Definition File**	PostScript
2	**Printer Port <1>, <2>, <3>, or <D>efault (LPT1)**	**Enter the appropriate port #**
3	**Line Spacing**	**6**
4	**Pitch**	**R** for regular
5	**Printer Initialization String**	**D** for Default
6	**Printer Reset String**	**D** for Default

Press **F10**
Select **Record#**
Select **Yes**

Set the Address Setup Menu on the BOS OEM to 7 lines.

You are now ready to print addresses on your BOS OEM printer.

Software interface sample: **IBM FILING ASSISTANT**

Refer to the IBM Filing Assistant manual to setup a database for printing labels. The program uses pre-set printer specifications which are defined.

> From the main menu choose **PRINT**

> From the print menu choose **PREDEFINED PRINT SPEC**.

> Create a new print spec called BRYCE

Set up the format for the output of the address as follows, or alter it to better suit your database. (A proper address format, as per USPS guidelines, is listed in Appendix H). The **X** and the **+** symbols are an important part of the print specifications.

> Name: X
> Title: X
> Company: X
> Address: X
> City: +   State: +   Zip: +

Using the Bryce print spec, the program should now be able to output your address list to the Bryce Machine.

Software Interface sample: **Microsoft FoxPro 2.6 for Windows**

Installation:

Follow the instructions in the User Manual to install Microsoft FoxPro.

Choose **Label** from the Catalog Manager, then click on **New**.
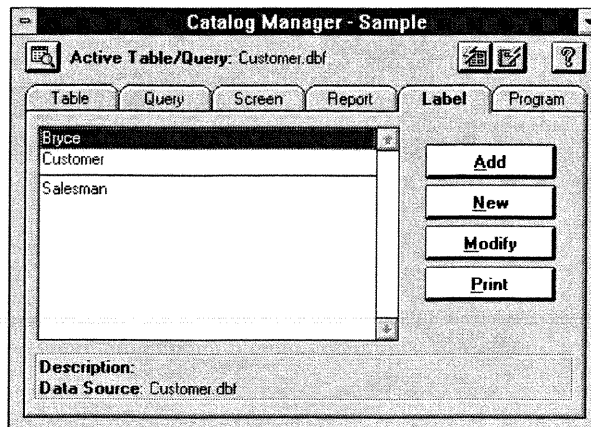
The **Create Label** window will be displayed. Select the table or query you wish to create a label for.

Click on **Label Wizard**

The **Label Wizard - Step 2 of 5** window will be displayed.
Select **Avery #5165 (8½ x 11)**
Click on **Next**.
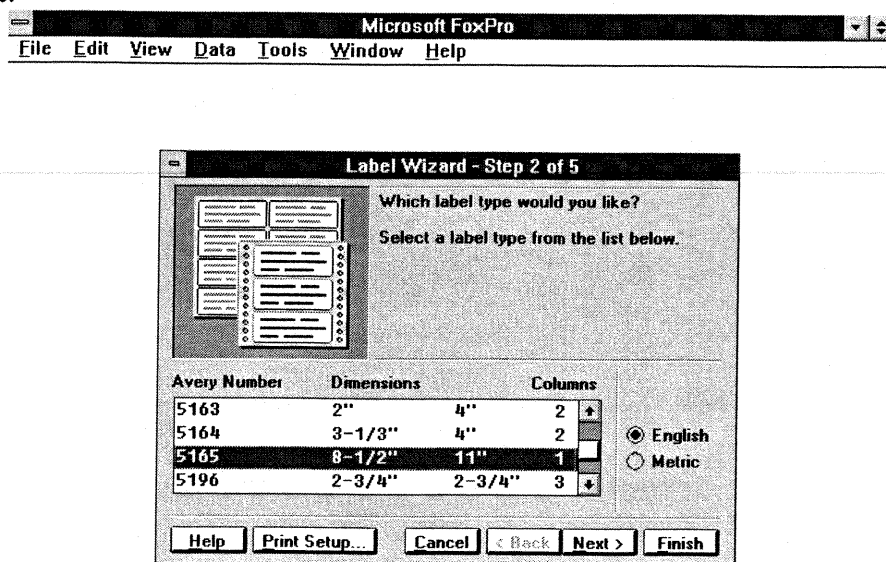
The **Label Wizard - Step 3 of 5** window will be displayed. Select the fields you wish to include in your label.
Insert a space between the City and State fields, and also between the State and Zip fields, as shown below.
When you have done this, Click on **Next**.
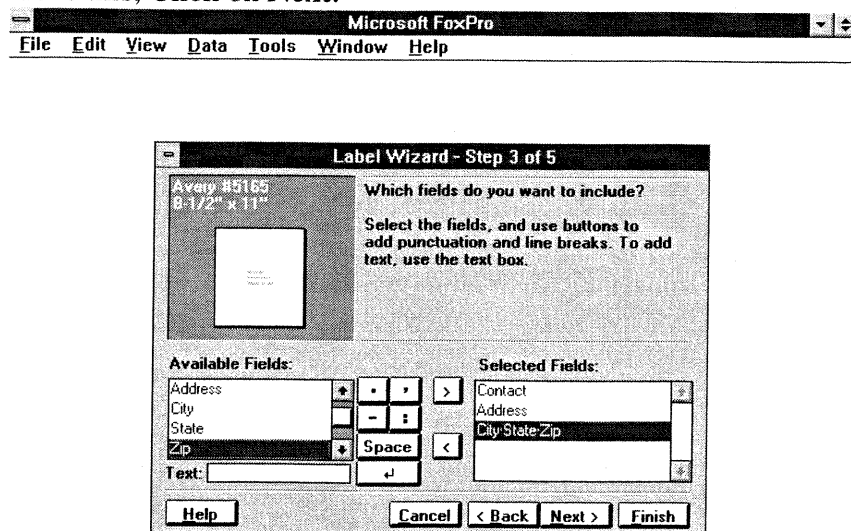
continued on next page

The **Label Wizard - Step 4 of 5** window will be displayed. Select the field or fields you wish to sort by.

Note: If Descending is selected, the mail pieces will be stacked in ascending order when they exit the Bryce printer.

Click on **Next**.
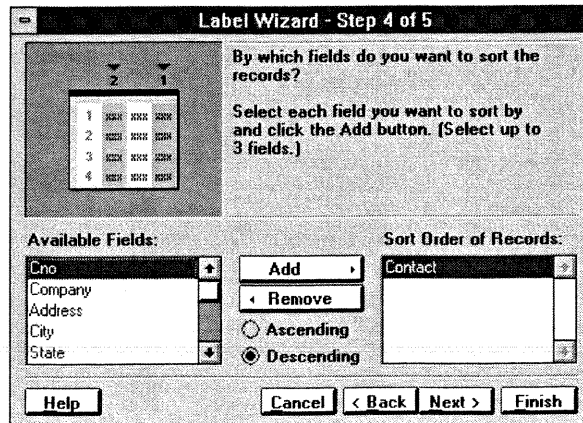
The **Label Wizard - Step 5 of 5** window will be displayed.
Select **Save Label for Later Use**.
Select **Finish**

The **Save As** window will be displayed.
Enter a filename for the label file. In our example, we have selected the filename BOS_TEST.lbx.
Select **OK**.

This will bring you back to the Catalog Manager. Select the file Bos_test.
Click on Modify. (see next page)
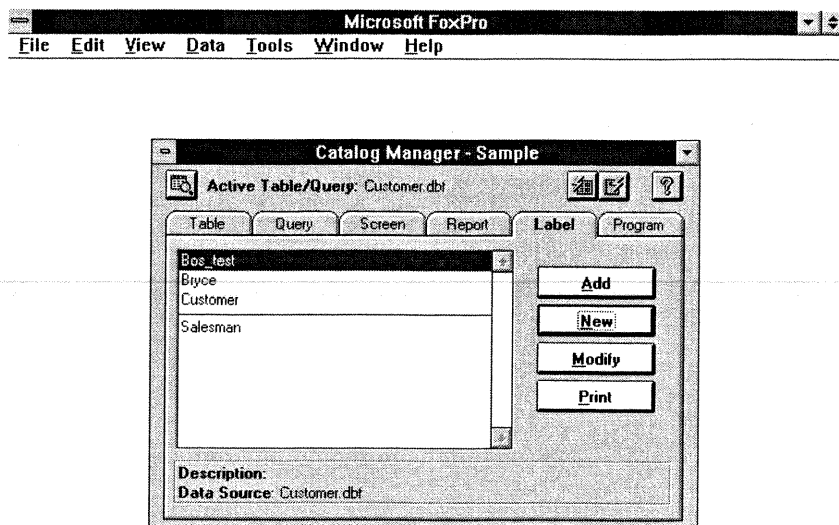
The **Change Label** window will be displayed.

Click on **Label Writer**.
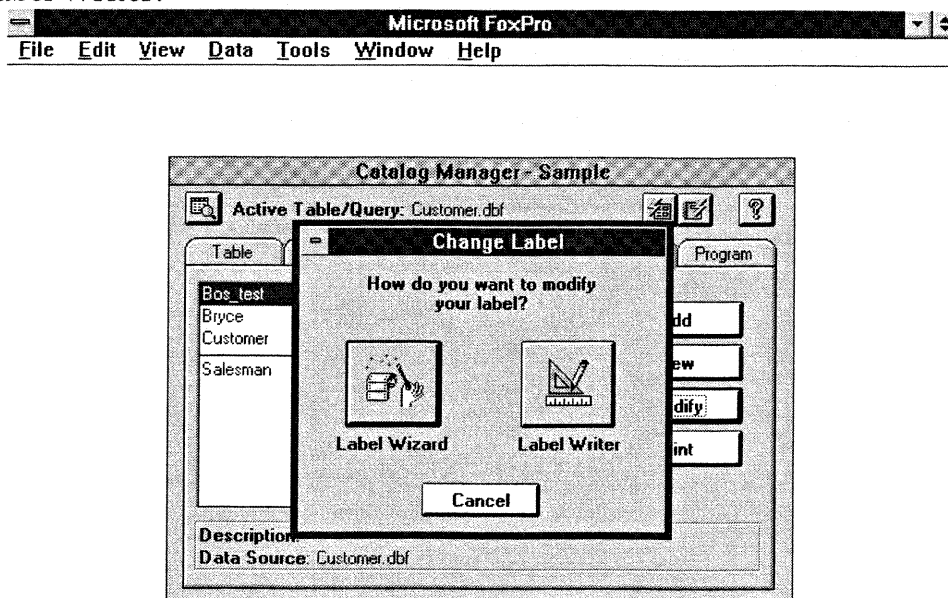
continued on next page

The **Microsoft FoxPro Label Edit** window will be displayed.
No fields will appear on the display, this is because the fields are located towards the bottom of
the label.
Click on the side scroll bar until you see the fields.
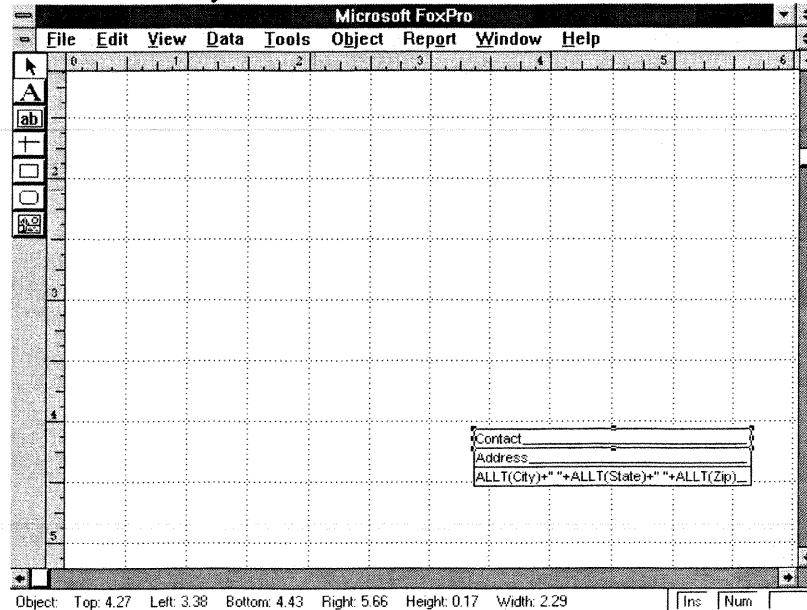
Move the fields to the top left of the label, as shown below.
Make sure that you move the first field to the 0,0 position.
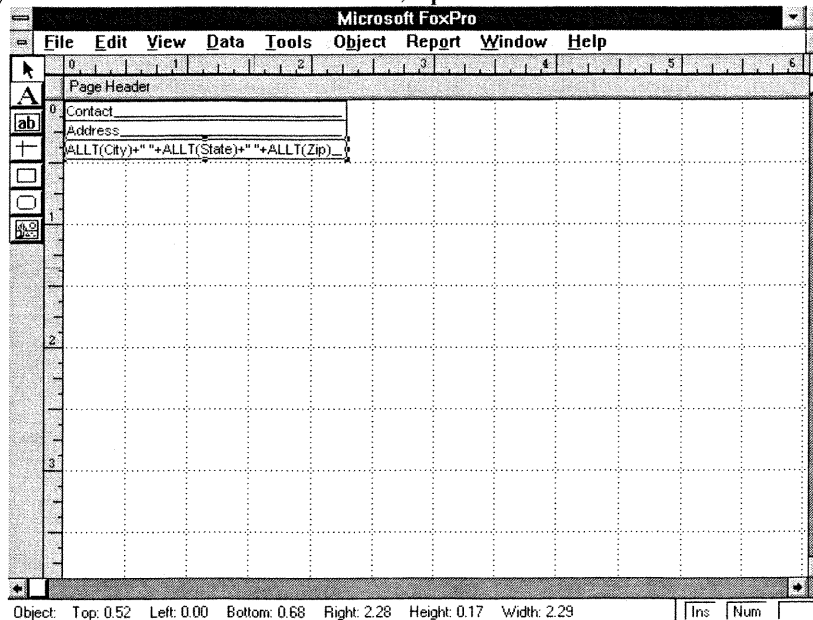
Select **Save** from the File Menu.
Select **Close** from the File Menu.

Select **Print** from the Catalog Manager.
The Catalog Manager Print window will be displayed.
Select **Printer** as the destination.
Click on **OK**.
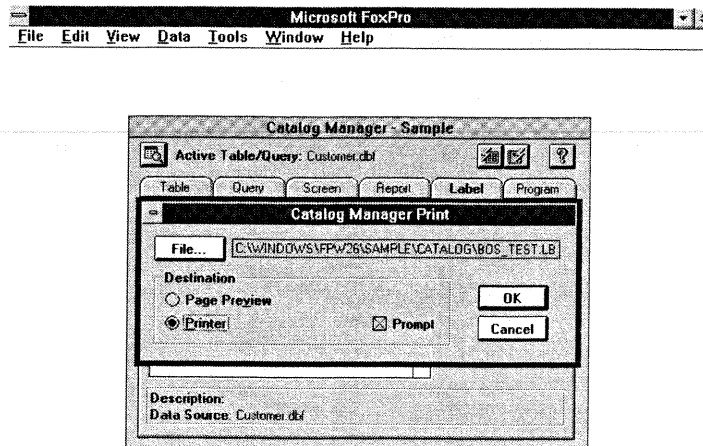
The **Print** window will be displayed.
Click on **Setup**.
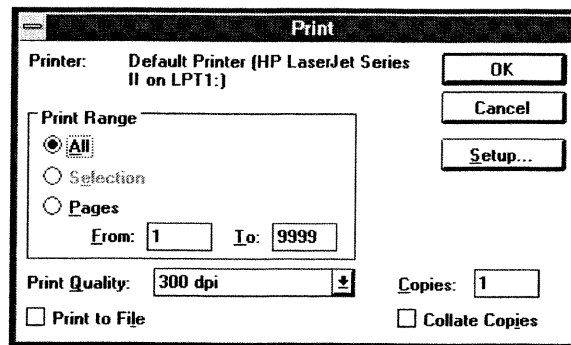
Select the **Generic/Text Only** printer driver.
Click on **OK**
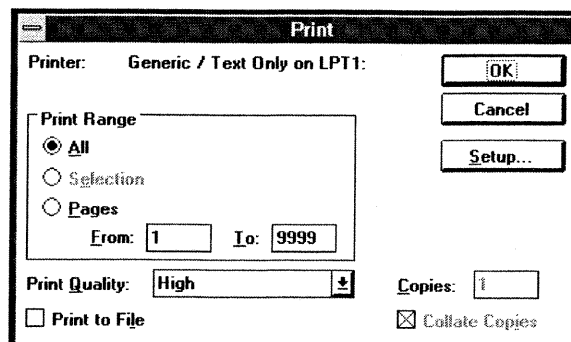
Set the ADDRESS SETUP, located in the Bryce printers Setup Menu, to 66 lines.
You are now ready to print.
Click on **OK**.

Software interface sample: **LOTUS 123 Release 3.1+ for DOS**

Before running 123, the Bryce printer must be installed by choosing **"GENERIC" "no backspace"** for printer specification.

Run 123

Address should be entered in a **single** column, all addresses in file must have the same number of lines (add blank lines if required).

Set the ADDRESS SETUP in the BOS OEM menu to equal the number of lines each record. If page breaks are used, set ADDRESS SETUP in the BOS OEM menu to 1 line more than the number of lines in each record.

Turn **AUTO LINE FEED ON** in the OEM Setup Menu.

Select **PRINT**
Select **PRINTER**
Select **OPTIONS**
Select **OTHER**
Select **UNFORMATTED**
Select **ADVANCED**
Select **AUTOLF**
Select **YES**
Select **QUIT**
Select **QUIT**
Select **GO**

Software interface sample: **MailMiser ver 1.2**

Refer to the MailMiser User's Guide to setup a database for printing labels.
While using MailMiser, a label must be defined in order to print your addresses on the BOS OEM.

Select **System/Printer Functions (9)** from the Main Menu.
 The System/Printer Function Menu will be displayed.
  Select **Printer Selection (3).**
   The Print Selection Menu will be displayed.
  Select **BRYCE BOS 12K.**
You will be returned to the System/Printer Functions Menu.
  Enter data according to the following table.

1.	Function "Typing" Keys	
2.	Rebuild Indexes	
3.	Printer Selection	**Bryce BOS 12K**
4.	Reset Printer	**Yes**
5.	Special Printer Codes	
6.	Default Directory	
7.	Color/Monochrome	enter monitor type
8.	Delivery Point Barcode	**NO**
9.	Printer passes for Barcode	**1**
0.	Exit to Main Menu	

Select **Exit to Main Menu (0)**, after you have entered the above data.
The MailMiser Main Menu will be displayed.
  Select **Label/Envelope Sizes (8).**
   Select **Choose from standard label sizes (1).**
   Select **Direct Image Printer, 1 up, 0 margin.**

MailMiser will ask you if you want to Print a Test Pattern, select **NO** at this time, this will return you back to the Main Menu.
  Select **Label/Envelope Sizes (8).**
   Select **Edit current label size (2).**
   Enter data according to the following table.

Label Description	Direct Image Printer, 1 up, 0 margin
Label Width	**4.5**
Left Margin	**0**
Inches from top of 1 label to top of next label	**1.167 (for a 7 line address)** **approx. .167 per line, at 6 lpi**
Number of Labels across	**1**
Number of Spaces Between Labels	**0**
Lines Per Inch	**6 lpi (default)**
Characters Per Inch	**10 cpi (default)**

Select **Print Labels from the Main Menu** to print addresses.
NOTE: Select NO when the program asks you if you want to print Postnet Barcode.

Software interface sample: **MULTIMATE**

An address may be printed using Multimate Merge Print.

Refer to MULTIMATE and create a merge file. The following is an example of a typical merge document for addressing:

```
name
title
company
address
city    state    zip
```

From the main menu, select merge print, When the DOCUMENT PRINT OPTION screen is reached, set up the following section of parameters as shown below:

Enhanced [N]/ Draft [Y]	Y
Print Action Table (PAT)	TTYCRLF
Pauses Between Pages [N or Y]	N
Print Comments [N or Y]	N
Print Document Summary [N or Y]	N
Print This Screen [N or Y]	N
Justification [N or Y or (M)icro]	N
Lines Per Inch [6 or 8]	6
Paper Length (lines per page)	8

The option listed on the document Print Option screen which are not listed above are either not applicable to printing addresses or are specific to your particular installation.

Software interface sample: **MyMailList ver. 1.9.7**

Addresses may be printed on the **BOS OEM** using **MyMailList**.

After entering your data:
Press **F3**, the cursor will move into the **Print Format** window.
      Select **3 1/2 x 15/16 labels**
            1 label across
            0 left margin
            1 copy

      NOTE: MyMailList does not allow you to create a custom label size, therefore you have two choices;
            1.   **3 1/2 x 15/16 labels - this limits you to 6 lines per address and 35 characters per line.**
            2.   **Envelope - this also limits you to 6 lines per address, and pauses the printer after each address.**

Press **F4**, the cursor will move into the **Print** window.
      Enter the Start and Stop Data as required.
Set **ADDRESS SETUP** on the BOS OEM to **6 lines**.
Press **F10 to Print.**

MyMailList is set to print to whatever printer you have connected to Parallel Port #1 (LPT1). If your BOS OEM is not connected to LPT1, press Ctrl-P to view the Printer Choice Menu., and select the correct port.

Software Interface sample: **Postalsoft Desktop Mailer ver. 5.0 for Windows**

Installation:

Follow the instructions in the User Manual to install Postalsoft Desktop Mailer. Install the Bryce 10K printer driver that is supplied with Postalsoft Desktop Mailer.

Select **New** from the File Menu.
Select the required fields. (See the new record layout example below.)

Record Layout

Predefined fields:

Fields in record:

Field Properties

Name: FIRST   New

Kind: First name

Type: ● Character O Number O Float
      O Logical O Date O Memo

Size: 12   Decimal places: 0

Attrib: ☐ Indexed ☐ Coded ☐ Hidden

☒ Index deletions   ☐ Advanced options

Add >>
Insert >>
<< Remove
Change >>

FIRST
LAST
COMPANY
ADDRESS_1
ADDRESS_2
CITY
STATE
ZIP
DP2
CRRT
LOT
LOT_ORD

Copy other window's layout

OK   Cancel   Help

When the data is inserted into your database, you must select a template.
Select **Choose Template** from the Print Menu.
Select **New.**
In the example below, a template named bryce.tpl has been created.

Edit Template

Template:

{Bar}
[FIRST] [LAST]
[ADDRESS_1]
[CITY] [STATE] [ZIP]

Field names:
FIRST
LAST
ADDRESS_1
CITY
STATE
ZIP
DP2
DPC
ERR_STAT

Commands:
Pkg. mark Both
Pkg. mark Endorse
Pkg. mark First
Pkg. mark Sticker
Record number
Sequence
Underline = off
Underline = on
Units = cm.
Units = in.

Name:
bryce.tpl
Description:
bryce template

Insert field   Insert command
New line   Save   Cancel
Help

continued on next page

When the template is created, you must choose a form.
Select **Choose Form** from the Print Menu.
Select **New** from the Choose Form for Printing Menu.
Enter the parameters into the **Edit Form** window as shown below.

```
┌───────────────────────────────────────────────────────────────┐
│ ▬                        Edit Form                             │
│ ┌───────────────────────┐      ┌───────────────────────┐      │
│ │1    Labels across page│      │1    Labels down page  │      │
│                                                               │
│ │4.2      Width of label│      │1.2       Height of label      │
│                                                               │
│ │0.0   Left margin (to paper edge) │0.000   Top margin        │
│                                                               │
│ │0.000   Width between labels│     │0.000   Height between labels│
│                                                               │
│ │4.2      Form width    │      │1.2       Form height  │      │
│                                                               │
│ Form name:      ┌─Units──────┐ ┌─Form Kind───┐ ┌─Orientation─┐│
│ ┌────────────┐  │ ◉ Inches    │ │ ◉ Continuous│ │ ◉ Portrait  ││
│ │Bryce.frm   │  │ ○ Centimeters│ │ ○ Sheet    │ │ ○ Landscape ││
│ Description:    └────────────┘ └─────────────┘ └─────────────┘│
│ │Label for Bryce 10K, 10K-E, 12K, 16K & 20K                   │
│                                                               │
│ ┌───────┐  ┌────────┐  ┌──────────┐  ┌───────┐                │
│ │ Save  │  │ Cancel │  │ Options...│  │ Help  │               │
│ └───────┘  └────────┘  └──────────┘  └───────┘                │
└───────────────────────────────────────────────────────────────┘
```

The next step is to select a printer.
Select Choose Printer from the Print Menu.
Select **Bryce 10K on LPT1** (LPT1 is used as an example, the actual printer port that you have
   the Bryce 10K assigned to in Windows will be displayed here.)
Click on OK

Set the ADDRESS SETUP, located in the Bryce printers Setup Menu, to 8 lines.

You are now ready to print.
Select **Print Labels** from the Print Menu.

Software Interface sample: **PreSort Pro by MCS version 2.4 for Windows**

Installation:

Follow the instructions in the User Manual to install PreSort Pro. Install the Standard/Text only printer driver that is supplied with PreSort Pro.

Select **New** from the File Menu.

Select the required fields. (See the new record layout example below.)

```
┌──────────────────────────────────────────────────────────────┐
│ ─                      New Record Layout                       │
│                                                                │
│              Predefined fields: [              ] [±]           │
│                                            Fields in record:   │
│  ┌─Field Properties─────────────────────┐   ┌──────────────┐  │
│  │                                       │   │ FIRST        │  │
│  │  Name: [FIRST        ]  [ New  ]      [ Add >> ]  LAST   │  │
│  │                                       │   │ COMPANY      │  │
│  │  Kind: [First name    ] [±]  [ Insert >> ] ADDRESS_1    │  │
│  │                                       │   │ ADDRESS_2    │  │
│  │  Type: ⦿ Character ○ Number ○ Float  [ << Remove ] CITY │  │
│  │        ○ Logical  ○ Date  ○ Memo      │   STATE         │  │
│  │                             [ Change >> ]  ZIP          │  │
│  │  Size: [12]  Decimal places: [0]      │   DP2          │  │
│  │                                       └──────────────┘  │  │
│  │  Attrib: ☐ Indexed ☐ Coded ☐ Hidden  [ Copy other window's layout ] │
│  └───────────────────────────────────────┘                    │
│  ☒ Index deletions   ☐ Advanced options   [ OK ] [ Cancel ] [ Help ] │
└──────────────────────────────────────────────────────────────┘
```

When the data is inserted into your database, you must select a template.

Select **Choose Template** from the Print Menu.

In the example below, a template named bos_test.tpl has been created. Notice that there are no printer control codes displayed at the beginning or end of the template.

```
┌──────────────────────────────────────────────────────────────┐
│ ─                 Choose Template for Printing                 │
│  Template name:        View of template:                       │
│  ┌──────────────┐      ┌──────────────────────────────────┐   │
│  │ adr1.tpl   ↑ │      │ [FIRST][LAST]                    │   │
│  │ adr2.tpl     │      │ [COMPANY]                        │   │
│  │ adr3.tpl     │      │ [ADDRESS_1]                      │   │
│  │ bar1.tpl     │      │ [ADDRESS_2]                      │   │
│  │ bar2.tpl     │      │ [CITY],[STATE]. [ZIP]            │   │
│  │ barenv3.tpl  │      │                                  │   │
│  │ bos_test.tpl │      │                                  │   │
│  │ bryce.tpl    │      │                                  │   │
│  │ bulkbare.tpl │      │                                  │   │
│  │ bulkbars.tpl ↓│      └──────────────────────────────────┘   │
│  └──────────────┘                                              │
│  Description:                                                  │
│  [ Select ] [ Cancel ] [ Edit... ] [ New... ] [Rename...] [ Delete... ] [ Help ] │
└──────────────────────────────────────────────────────────────┘
```

When the template is created, you must choose a form.
Select **Choose Form** from the Print Menu.
Select **bryce.frm** from the Choose Form for Printing Menu (shown below).
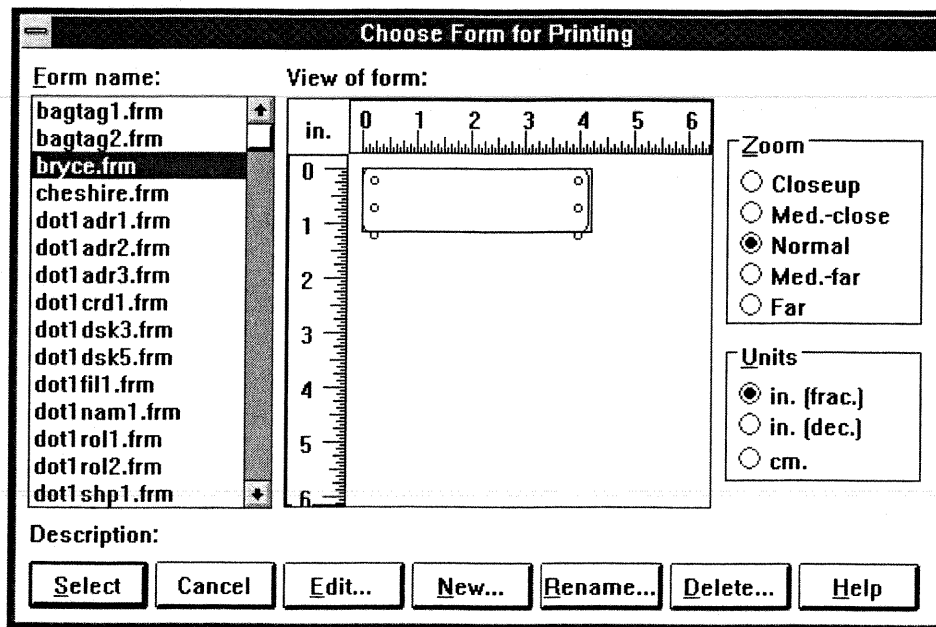
The next step is to select a printer.
Select Choose Printer from the Print Menu.
Select **Standard/Text Only**, (as shown below).
Click on OK
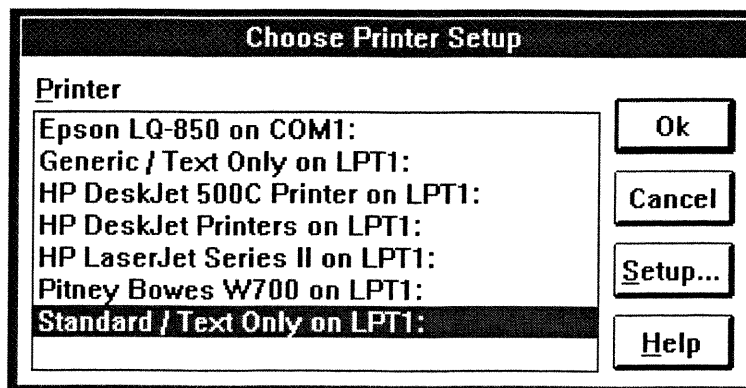
Set the ADDRESS SETUP, located in the Bryce printers Setup Menu, to 8 lines.

You are now ready to print.
Select **Print Labels** from the Print Menu.

Software interface sample: **RAPIDFILE**

Before running RAPID FILE, a printer driver must be loaded. This is done by running RAPID FILE's Printer program from DOS as explained in the RAPID FILE manual.

The printer file to select is called **GENERIC**, and must be set up as one of the printer devices with appropriate I/O port settings.

From within RAPID FILE when printing addresses:

1.   Select FILE from the main menu
2.   Select **RETRIEVE FILE or CREATE** (If you choose to create, enter data)
3.   Select **LAYOUT**
4.   Select **LAYOUT TYPE**
5.   Select **LABEL**
6.   When asked if you want to design a label - Select **YES**

       A LABEL WILL BE DISPLAYED IN THE CENTER OF THE SCREEN

7.   Press **F10**
       Select **SHOW FIELD**, Fields will be displayed on the right side of the screen.
       Select **FIELD**
              Use arrows to set field width.
              Use arrows to drag field into position.
       REPEAT Step 7 until all fields are placed
8.   Press **F9** to Implement
9.   Select **PRINT** from main menu
10.   Select **DESTINATION**
11.   Select BEGIN PRINTING

Software interface sample: **REFLEX ver. 2.0**

Referring to the REFLEX manual, run REFLEX, load a file, or create a file.

Create the fields required.

Select **Reports & Labels** from the **Views Menu**.
          This will bring you to the **Report Design** display.

Select **Make Labels** from the **Report Menu**.

Select **Customize Labels** from the **Report Menu**.

Set: Label Width: **45**
          Label Height: **7**
          Lines between labels: **0**
          Spaces between labels: **0**
          Labels across page: **1**
          Compress blank lines: **Yes or No**
          Left margin: **0**
          Setup String: **(blank)**
Select **Proceed**.

Place cursor at the beginning of the first line of the label.

Enter field names into label.

Select **Local Properties** from the **Report Menu** when you are done entering the field names into the label.

Set the field widths as required, set State field width to two (2) characters.

Click on State and Zip fields, and move to create a space between the City and State field, and the State and Zip field.

You are now ready to print addresses on your BOS OEM.

Select **Print** from the **Utilities Menu**.

Set Address Setup on the BOS OEM to **seven (7) lines**.

Select **Print to Printer**.

Select **Proceed**.

Software interface sample: **WORDPERFECT 6.0**

Addresses may be printed with WORDPERFECT 6.0 using **merge printing**. This requires the creation of a **primary** and a **secondary** file. Refer to your WORDPERFECT manual for instructions.

The following is an example of a typical merge **primary** file for addressing:

{FIELD}1"
{FIELD}2"
{FIELD}3"
{FIELD}4"
{FIELD}5"

The following is an example of a typical **secondary** file for addressing:

John Doe{END FIELD}
123 Main Street{END FIELD}
Anytown, CT. 12345-6789{END RECORD}

Before performing the actual merging of data from your secondary file, several options **must** be chosen:

Set Margins	**Top**	**0"**
	Bottom	**0"**
	Left	**0"**
	Right	**0"**

You may now merge the two files.

From the Tools menu, select **Merge**
    Select **Run**
    Enter Form filename (Primary File)
    Enter Data filename (Secondary File)
    Select **Merge**

From the File menu, select **Print/Fax**
    Select **DOS Text Printer**
    Select **Edit**, and insure correct port is selected for the DOS Text Printer

You may now print address lists on your BOS OEM Print Station.

Software interface sample: **WORDSTAR FOR DOS ver. 7.0**

From the **File Menu** select **New**.

From the **Layout Menu** select **Page**.

Enter the following settings:

Odd Offset	**0.00**
Even Offset	**0.00**
Top	**0.00**
Bottom	**0.00**
Header	**0.00**
Footer	**0.00**
Orientation	**Portrait**
Page Length	**1.34**
Paper Bin	**Leave Blank**

Select **OK**.

The screen should now display the following information:
.poo	.00"
.poe	.00"
.mt	.00"
.mb	.00"
.hm	.00"
.fm	.00"
.pl	.00"
.pl	1.17"

Enter in the data for each record. When a record is complete, press **ENTER** until a page break is displayed on the screen (a solid horizontal white line).
Once the page break is displayed, you can enter the next record.
Repeat this process to enter all records.

To Print:

Set the BOS OEM **Address Setup** to eight (8) lines of address.
Select **Change Printer** from the **File Menu**.
Select **Draft Printer**.
Select **OK**.
Select **Print** from the **File Menu**.

POWER PRINT for the MACINTOSH

PowerPrint by GDT Softworks consists of software printer drivers and a high speed serial-to-parallel adapter which allows for a virtually transparent connection between your Macintosh and the BOS OEM.

Installation:

Follow the instructions in the User Manual to install PowerPrint. Select the **LaserJet 4** printer driver to install for use with the BOS OEM.

Activating Your Driver:

- Go to the Apple menu and select **Chooser**.

- Select the **LaserJet 4** printer driver.

- Click on the serial port to which you have the BOS OEM connected, either the modem (phone) or printer icon.

NOTE: *If you are connecting your printer cable to the printer port, Appletalk must be set to "inactive".*

- Click on the box labeled **Cartridges**. A Cartridge Mapping window will be displayed. Map the following fonts:
   Mac Font called Courier to print as the HP Font Courier.
   Mac Font called Helvetica to print as the HP Font Arial.
   Mac Font called Times to print as the HP Font Times New.
- Click on **OK**.
- Close the Chooser by clicking on the close box in the upper left corner. The Address Printer is now configured to print with the PowerPrint driver.

Printing:

Go to the **Setup Menu** on the BOS OEM and turn on **Auto Line Feed**.

While in an application, go to the **File** menu and select **Page Setup**. Select:
- Paper = **US Letter**
- Reduce or Enlarge = **100%**
- Page Orientation = **Portrait**
- Printer Effects = **Fractional Widths**
Click on **OK**

POWER PRINT for the MACINTOSH (Continued)

Page Setup:

- Select **Show** from the **Layout** menu, then select **Non-Printable** Area.
- Set page width to 8.5 Inches (215.9 mm).
- Set page length to 11 inches (279.4 mm).

Measure the position of your address from the bottom edge of the paper, just as you would from the bottom edge of your mail piece. See example shown below.

8.5 x 11 Inches

Non-Printable area

Printable area

Bryce Office Systems
115 Hurley Road
Oxford, CT 06478-1035

2.0 Inches

4.0 Inches
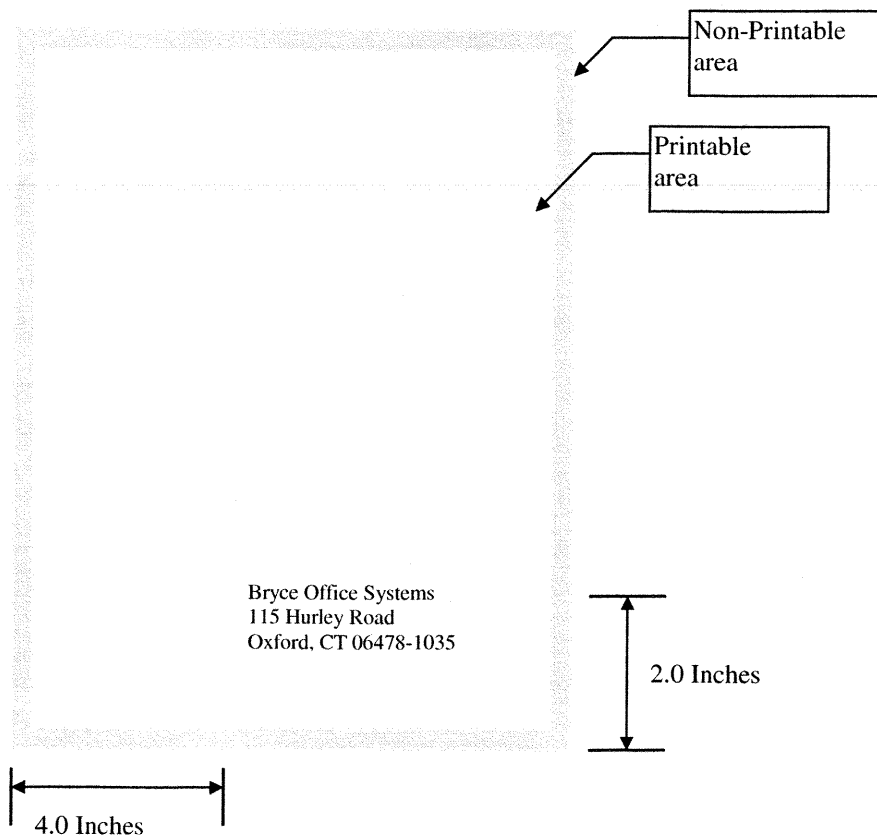
Go to **File** menu and select **Print**. Select:
- Print Mode = Draft
- Feed = Automatic

Click on **Print**.

Computer setup sample: **IBM Mini's (System 34, 36, 38) & AS400**

To use the BOS OEM with any IBM minicomputer or mainframe, it is necessary to interface through some kind of protocol converter. This may be one of two types of systems; either an IBM compatible micro with an emulation card, or a stand alone protocol converter such as is available from Black Box Corp. in Pittsburgh, PA (i.e., model PQ-6 RO). In either case the installation is very similar.

1.   The protocol conversion device must be connected to the IBM computer with the appropriate   cable.

2.   After deciding on a free work station address to be used for the BOS OEM, the system configuration must be altered to setup the work station address and port as an IBM 5256 printer.

3.   The emulation system must be setup at the same workstation address and must be setup for   IBM Proprinter II emulation.

For a system 36 installation, with IBM advanced emulation, the following is the correct procedure to follow on the PC:

A.   Boot the PC with DOS
B.   Running off the advanced emulation program disk, type "Config DP5250.dat"
C.   Select 2 Emulation sessions
D.   Select the appropriate keyboard
E   Set workstation addresses for the two sessions, as configured on the system 36
F.   Set 5256 Printer Emulation
G.   Select IBM Proprinter II
H.   Save profile data and exit

4.   A procedure must be written and run which sets the printer port for the page length of 6 lines (BOS OEM with LCD SETUP MENU to set up the ADDRESS SETUP to   6).

5.   An RPG program will probably be necessary on the system 36 to produce a data format which is "one-up" label compatible.

6.   You may now print address lists on your BOS OEM.

Software interface sample: **MICROSOFT WORD FOR WINDOWS ver. 2.0**

Using you mouse Select FILE
        Inside the pull down menu for File, Select NEW
           Once New has been selected a pop up window will appear.
        Scroll through the available documents using the down arrow, Select MAILLABL
        Now Select OK
        Now a new pop up window appears called Mailing Labels
        Inside the Mailing Labels section, Select DOT MATRIX
        Now another new pop up window appears called Dot Matrix Printer Label Sizes.
        Scroll through the selection of product numbers for Avery Dot Matrix Labels,
        Select 4600 ADDRESS
        Then Select OK
        Now another new pop up window appears called MicroSoft Word.
        Select SINGLE LABEL
        Now a new pop up window appears called Mailing Labels which depicts a sample
        label for six (6) lines.
        Type data into each line of the label address, TAB to go to NEXT LINE
        When address data is completely entered, Select DONE
        To print the sample label, select FILE
        Inside the pull down menu for File, Select PRINT SETUP
        Now a new pop up window appears called Print Setup
        Select GENERIC/TEXT ONLY ON LPT1
        Select OK
        Select FILE
        Inside the pull down menu for File, Select PRINT

Software interface sample: **Word97 for Windows 95**

Select **Page Setup** from the FILE menu.
Select the **Margins tab**, and set ALL margins to zero (0)
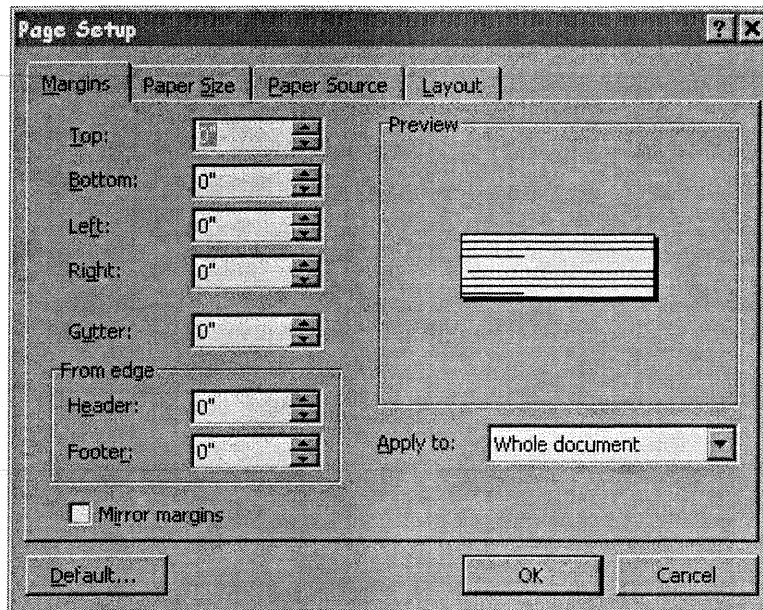
Select the **Paper size tab**, then select **Custom** from the Paper size text box.

Set the page width to 4.2"
Set the page height to 1.4"

Select OK. After you select OK, you may see a warning similar to the warning shown below. Click on the **Ignore** button.

Microsoft Word

⚠ One or more margins are set outside the printable area of the page. Choose the Fix button to increase the appropriate margins.

[Fix] [Ignore]

Select **Page Layout** from the VIEW menu, and your page should look similar to the example show below.

To print to the OEM printer:
> **Note:** Make sure that the ADDRESS SETUP option in the Bryce Setup Menu is set to Nine (9) lines or greater.

Select **Options** from the TOOLS menu.

Select the **Compatibility** Tab from the OPTION dialog box. Select **Custom** from the RECOMMENDED OPTIONS FOR: pull down menu. Check the box next to the Use Printer Metrics to layout document. Verify that none of the other boxes have a check inside. The dialog box should look like the options box below.

Options

View | General | Edit | Print | Save | Spelling & Grammar
Track Changes | User Information | Compatibility | File Locations

Compatibility options for 11umsecF1.rtf

[Font Substitution...]

Recommended options for:
Custom

Options:
- Substitute fonts based on font size
- Suppress extra line spacing at bottom of page
- Suppress extra line spacing at top of page
- Suppress extra line spacing at top of page like Word 5.x for the Mac
- Suppress extra line spacing like WordPerfect 5.x
- Suppress Space Before after a hard page or column break
- Swap left and right borders on odd facing pages
- Treat \" as "" in mail merge data sources
- Truncate font height
- Use larger small caps like Word 5.x for the Macintosh
- ☑ Use printer metrics to lay out document

[Default...]

[OK] [Cancel]

To make a Mail Merge select **Mail Merge** from the TOOLS menu.
The Mail Merge Helper window similar to the one to the right will appear. Select the **Create** pull down menu.
Select "**Form Letter**". Select the "**Active Window**" as the document that you wish to use.
Select "**Get Data**" from the Mail Merge Helper.
Select the file you wish to merge with your MS Word document. You will get a message similar to the one below stating "**Word found no merge fields in your main document**". Click on the "**Edit Main Document**" button.
Move the cursor to the position you would like your address to begin.
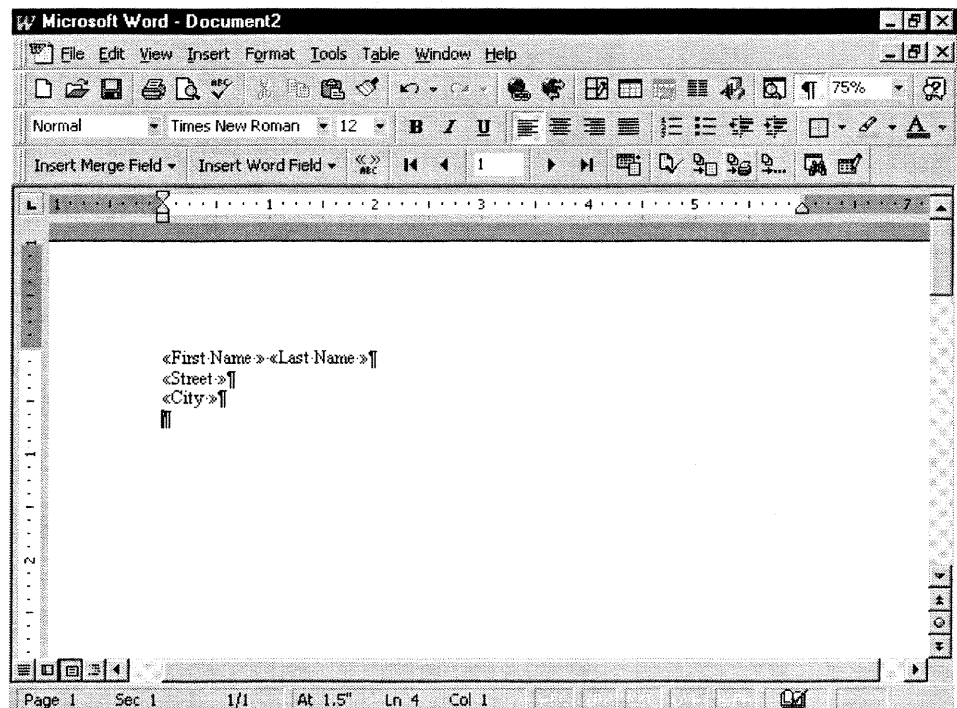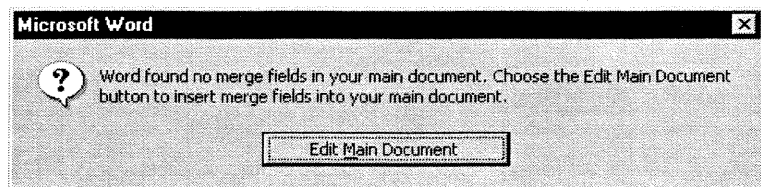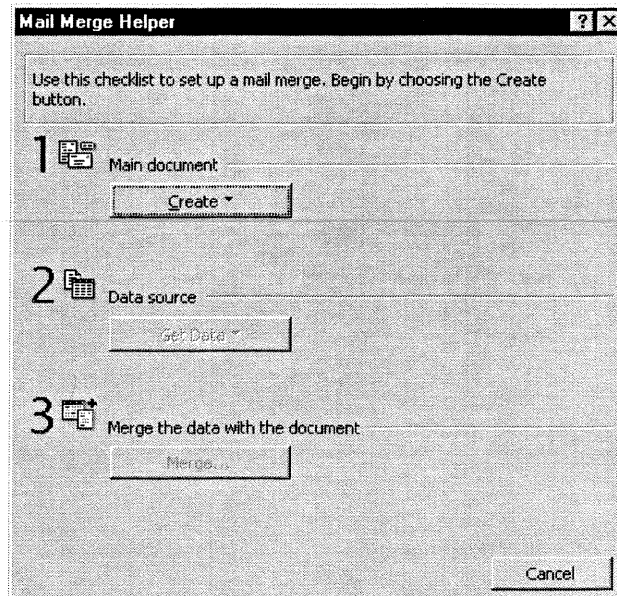Select "**Insert Merge Field**" from the toolbar.
Insert the fields you want on the form.
Select the Merge to Printer icon from the toolbar.
Your page should look similar tot he last example below.

The Print dialog box will appear.
Make sure that the **Generic/Text only** printer is selected.
Click **OK** to print.

Shipping Dimensions and Weight

Height:	16.0 inches	40.64 cm
Width.:	26.0 inches	66.04 cm
Depth:	11.0 inches	27.94 cm
Weight:	31.4 lbs. (14.2 kg) including accessories.	

Dimensions of Control Box

Height:	8.5 inches	21.59 cm
Width.:	7.0 inches	17.78 cm
Depth:	3.6 inches	9.14 cm

32 meg of Memory

Electrical

Voltage: Selectable voltages: 100v, 120v, 220v, and 240v

Fuse Type (100 – 120 volts AC + or - 10%):   One 3 AG 2 Amp Slo-Blo fuse, at 250 volts, is required/provided.

Frequency: 50 / 60 Hertz. + or - 3 Hz.

Fuse Type (220 – 240 volts AC + or - 10%):   Two 5 x 20mm. 1.5 Amp Slo-Blo fuses, at 250 volts, one for each leg, is required/provided.

Environmental Conditions.

Operating. (Power On.),	Temperature. 55.F - 95.F (12.C - 35.C),
	Humidity. 8% - 80%
	Die maximale Umgebungstemperatur betraegt 35C.
Non Operating. (Power Off.),	Temperature. 42.F - 100.F (5.C - 40.C),
	Humidity. 10% - 90%

Effective Print Area

Maximum Height of print area – 6 inches (15.24 cm), can be split into 4 – 1½ inch (3.81 cm) blocks

Maximum length of print line – 13 ½ inches (34.29 cm)

Print Density and Resolution.   Black

Super Draft	600 x 150 Dots per inch
Draft:-	600 x 200 Dots per inch
Letter:-	600 x 300 Dots per inch
Executive:-	600 x 600 Dots per inch

Speeds for Printing

Print Quality	Belt Speed in ips = inches / second	Max Throughput / Hr
Super Draft	Up to 96 ips (243 centimeter/sec)	40,000
Draft:-	Up to 72 ips (182 centimeter/sec)	30,000
Letter:-	Up to 48 ips (121 centimeter/sec)	20,000
Executive:-	Up to 24 ips (60 centimeter/sec)	10,000

Fonts

    5 Internal Fonts that are scalable   Unlimited TrueType Fonts

Point Size

Smallest	**Largest**
4 point	30 point

The Interface Panel

The interface panel is located on the side of the machine. It contains the main power switch, the power receptacle and fuse. The interface ports (parallel and serial) are the interface connections between the OEM and your computer.

1.   Connect the line cord from the printer receptacle to a properly grounded outlet box. Do not use an adapter plug. Avoid using outlets that are controlled by wall switches and shared with other equipment.

2.   Connect the interface cable from the computer to the appropriate connector on the printer interface panel. The typical cable length is six (6) feet long (182. 9 cm) for parallel and fifteen (15) feet (457.2 cm) long for serial.

DELIVERY POINT BAR CODE

NAIC Certification

This Address Printer is equipped with firmware for printing the United States Postal Service (USPS) Delivery Point Bar Code (DPBC). The printer is Certified by the National Address Information Center (NAIC). Certification from the NAIC indicates the printed POSTNET Bar - Code meets the required standards for letter size mail to receive USPS Delivery Point Bar Coded rates.

Delivery Point Bar Code

A Delivery Point Bar Code is comprised of a total of 62 bars: Framing Bar + ZIP + 4 Digits + Delivery Point Digits (2 digits) + Check Digit + Framing Bar. The Address Printer uses the data sent down on the last line to print the DPBC.

Alternate Address Formats

The option to send the Address Printer a ZIP + 4 + 2 or ZIP + 4 + 3 address to print a Delivery Point Bar Code is available. Only the addresses with ZIP + 4 (9 digits) or ZIP + 4 + 3 (12 digits) digits are allowed by the USPS to appear in the address block.

Customizing the location of the Barcode

Use the following 11 or 12 digit formats to print the barcode in any desired location on the media:
~~ZIP + 4 + 2 (e.g. ~~98765-123412)   or   ~~ZIP + 4 + 3 (e.g. ~~98765-1234123)
Note: The only characters that can precede the "~~" tilde tilde characters are blank spaces.

Example of using the **Tilde Tilde (~~)** command for customizing the bar code location in the address block while placing a USPS barcode below the address.

```
I,,I,I,,I,III,,I,,,I,III,,,,,,,,I,I
```
***********************5 DIGIT
#JAN93 000 MD #123BL

XYZ Corporation
123 Washington Road
Anytown, CT **06470-1234**

```
III,I,II,I,,II,III,,II,III,III,I,,II
```

The **Tilde Tilde (~~)** code barcode will print on a line when the first two characters in the line are two **tilde tilde** characters (~~) followed by the digits that represent the desired barcode.

ASCII text sent to produce the above example is:
        ~~123456789012 (Tilde Tilde Code & Barcode data sent)
***********************5 DIGIT
#JAN93 000 MD #123BL

XYZ Corporation
123 Washington Road
Anytown, CT **06470-1234~123** (USPS information sent)

Valid Address Formats

Address ZIP Codes	Data Sent to Printer	Printed in Address Block	Bar - Code Printed
ZIP + 4 + 2*	98765-1234~12	98765-1234	DPBC
ZIP + 4 + 3*	98765-1234~123	98765-1234	DPBC
ZIP + 4 + 3	98765-1234123	98765-1234123	DPBC
Illegal Format			
ZIP + 4	98765-1234	98765-1234	9 Digit Bar - Code
ZIP + 4 + 2	98765-123412	98765-123412	No Bar - Code

* Add the Tilde (~) after the ZIP + 4 digits so the 2- or 3 - digit add on will not be printed in the address block.

ZIP + 4 + 2

The Address Printer will determine the correction digit and print the DPBC according to the ZIP code received. Using the ZIP + 4 + 2 format requires that the Tilde (~) character be sent between the ZIP + 4 and 2- digit characters. Only ZIP + 4 digits will be printed in the address block.

ZIP + 4 + 3

The Address Printer will print the DPBC according to the ZIP code received. Two formats of printing the Zip Code in the address block are available. First option is to print all the digits of the ZIP + 4 + 3 in the address block. Second option is to only print the ZIP + 4 digits in the address block, by placing the Tilde (~) character between the ZIP + 4 and 3- digit characters.

PLANET Code Bar Code

Postal Alpha-Numeric Encoding Technique (PLANET) provides features that are not currently available with the POSTNET barcode. PLANET bar codes are broken down to a list of planets.

The following is a list of each planet and the applications supported by that planet's particular PLANET bar code.

☐ **Jupiter-** A 12-digit barcode containing mail piece rate, presort bureau origin, and customer identification.

☐ **Mercury** - A 12-digit barcode used for CONFIRM or CIPS service.

☐ **Earth-** A 12 digit barcode used for sorting foreign mail.

☐ **Pluto-** A 12 digit barcode for automated address correction requests.

☐ **Saturn-** A 12 or 14 digit barcode for RTS or CFS mail.

☐ **Neptune** - A 12 digit barcode for mailer use.

☐ **Venus -** A 12 or 14 digit barcode used for electronic tracking.

The PLANET bar codes have the exact same dimensional requirements as POSTNET barcodes. Most PLANET barcodes are placed in the address block portion of the mail piece. Only PLANET **Earth** and **Saturn** barcodes may be printed in the traditional lower right area.

Example of using a PLANET bar code in the address block while placing a USPS barcode below the address.

**********************5 DIGIT
#JAN93 000 MD #123BL

XYZ Corporation
123 Washington Road
Anytown, CT **06470-1234**

A PLANET code barcode will print on a line when the first two characters in the line are a **tilde** followed by the **pound** character (~#) then the digits that represent the desired PLANET code.

ASCII text sent to produce the above example is:
**********************5 DIGIT
#JAN93 000 MD #123BL
~#123456789012 (PLANET Code sent)

XYZ Corporation
123 Washington Road
Anytown, CT **06470-1234~123** (USPS information sent)

EAN-13 / UPC-A Serial Shipping Barcode

The printer has the ability to print a nominal sized EAN-13 and UPC shipping barcode in both the normal or invert mode. The barcode consists of the machine readable barcode on top and the human readable test beneath. The barcode is printed below and to the right of the current position.

The barcode is designed to comply with the standard UCC/EAN Application Identifier standard and utilizes the UCC/EAN-128 symbolism.

To generate a UPC or EAN-13 barcode the digits to be coded must begin with a ~ **(tilde)** [Hex 7E] then an **& (ampersand)** [Hex 26] followed with the 12 digits for EAN-13. The printer will automatically calculate the check-digit. Send ten digits and two leading 0's (zeros) are added to generate the EAN-13 barcode.

For the printer to generate a UPC or EAN barcode the data sent must follow the ensuing rules:
☐ A (~**&**) must be the first two characters.
☐ The EAN-13 must have 12 digits, the UPC must have 10 digits.
☐ Spaces are not allowed within the EAN / UPC information.
☐ The EAN barcode information must be terminated with end of line characters (CR [Hex 0D] or LF [Hex 0A]).
☐ Only use ACII text or use Courier 12 pt when using widows to send the EAN / UPC barcode command and information.

Example: **To print a EAN-13**   ~&123987654321
     To print a UPC   ~&0198765432

Note: If an illegal format is rec the command will be ignored only the text will print.

Prefix (P1, P2, P3)	Code Number / Manufacturers Number / Item # (X)	Check-digit

EAN-13	P1	P2	P3	X	X	X	X	X	X	X	X	X	Check-digit
UPC-E			P1	X	X	X	X	X	X	X	X	X	Check-digit

The dimensions of the EAN-13 at nominal size are:
☐ 37.29 mm wide including clear space for margins
☐ 25.93 mm height - measured down from the top of the line from which it was generated.

The dimension of the UPC-E barcode at nominal size are:
☐ 22.11 mm wide including clear space for margins
☐ 25.93 mm height – measured down from the top of the line from which it was generated.
Keep these dimensions in mind when laying out the design for using the EAN-13 Barcode and the UPC-E barcode.

Glossary

cable

Wires that carry the information between the computer and the printer.

Centronic parallel interface

A device for connecting printers and other peripheral devices to a computer. It transmits a full byte at a time.

Character

A printable letter or symbol.

character height

The height of a uppercase letter. A character height is measured in points.

characters per inch

The number of character printed in a horizontal inch. Also called pitch.

character set

The set of characters or symbols that make up a language.

clean print cartridge

Describes the process of removing dried ink from the nozzles of the ink jet cartridge.

configuration

The settings used by the printer to communicate with the computer. Also the internal settings in the printer that control the print job.

control code

The instructions sent to the printer to describe how to perform the print job.

control panel

The buttons and display that are used to manually change the printers settings.

cpi

See **characters per inch**.

data communications

The sending of data from the computer to a peripheral device i.e. the printer.

dots per inch

The number of ink dots printed in one horizontal inch. The larger the number the better the resolution of print.

double feeding

Two or more pieces of media feed at the same time or without separation.

Dpi

See **dots per inch**.

draft quality

Print resolution using 150 dpi which saves ink and allows faster printing of a document.

Drivers

A file used by the computers software to communicate commands and information that the printer needs to layout and print a document.

embedded printer commands

Commands sent in a record or document to instruct the printer to change printing options.

EPROM

Electronic Programmable Read Only Memory

escape character

A special non-printable character (ESC / ➔) used to instruct the printer to change printing options.

escape sequence

Commands sent beginning with the escape character that instruct the printer to change printing options: fonts, page orientation, etc.

feed gap

Opening between the ends of the H-Block Assemby and the Feed Rollers so the media is fed one at a time.

font

A set of printable characters with consistent style and characteristics.

Grounded

A electrical circuit that has a voltage of zero.

Handshaking

A method for the computer to communicate with peripheral devices to ensure complete transfer of information.

hex dump

A printer option that allows all the information and commands sent to the printer are printed as base 16 digits.

Internal test address message

The preprogrammed Address that is printed when the Test Env. button is pressed.

interface cable

The cable that connects the printer or other device to the computer.

interface connector

The connectors on both ends of the interface cable that insert into the interface ports.

internal fonts

Resident or built-in fonts that reside inside the printer.

Jam

See Paper Jam.

letter quality

Print resolution using 200 dpi which saves ink and provides a high quality document.

lines per inch

The number of lines printed in one vertical inch.

Menu directories

The list of available printer controls that appear on the bottom of the LCD display. A directory can contain other directories called sub-directories.

Offline

The printer will no longer respond to information sent from the computer.

Online

The printer will accept and respond to information sent from the computer.

outline fonts

Scaleable printer fonts.

paper jam

When media gets stuck in the printer.

Parity

An error checking method used when communicating between the computer and a peripheral device.

PCL commands

A standard printer language developed of commands to access printer features or options.

point size

A measurement standard for Character Height. One point represents one seventy-seconds of an inch.

Port

See **Printer Interface Port**.

Postal regulations

Rules and guidelines setup by the United States Postal Service (USPS) for mail.

power socket

The socket on the back of the printer where the line cord is connected.

print cartridge

The cartridge that contains the ink for printing.

print quality

The quality of print, such as the resolution, sharpness of the image or font.

printer driver

See **Drivers**.

Record

A collection of related fields that make up the name and address of an individual in a mailing-list file.

sans serif

A font typeface that contains no serifs or finishing strokes on the top or bottom of the characters.

scaleable fonts

Outline printer fonts of characters and symbols that are stored in a mathematical form and are able to be enlarged or reduced.

Spacing

The relative spacing between characters.

Stuffed media

Media that is already filled and sealed for delivery.

sub - directories

A directory within a directory.

Troubleshooting

The process of finding the cause of a problem so that a solution can be found.

Handwritten top: 12020 -040 CONVERSION KIT FOR 9-FT CONVEYOR (3-BELT ~ 1-BELT)

Options & Supplies

The following list of option & supplies are available through your local Bryce dealer .

External Fonts & Supplies

Handwritten: OEM BOARD 30 - 00140 -001 FLASH CARD

Description	Part Number
Font Card:	
Alpine	56-96000-001
Aurora	56-96001-001
Calico	56-96003-001
Centurion	56-96022-001
Dingbat #2	56-96005-001
Eureka	56-96006-001
Indio	56-96008-001
Memo	56-96010-001
Mettler	56-96011-001
Oakland	56-96012-001
OCR A	56-96013-001
Palomar	56-96014-001
Parker	56-96021-001
Santee	56-96016-001
Stockton	56-96019-001
3 of 9 Barcode	56-96020-001
Novarese	56-96031-001

Handwritten left: Display 30-00025-003

Handwritten right: 3-PIN HEAD BANK 01-10002-203 6-PIN HEADBANK 01-10002-206

Handwritten right: CABLE 32-50003-0024 Cont 32-52003-005 BLADDER TRAY ASS'Y 16019-012 — DO

Alternative Kits

Description	Part Number
Kit:	
Encoder Assembly	01-10003-201
Reflective Sensor Assembly	32-50013-002
Q.D. Retro-Flective Sensor Assembly	32-50013-204
Retroreflective Tape (2" or 5 cm)	50-80015-016
Cartridge Capping Station	03-40000-201
Memory:	
32 Meg DIMM	50-51105-001
Print Head Assemblies:	
One Head	01-10002-201
Two Heads	01-10002-202
Three Heads	01-10002-203
Single Six Heads	01-10002-206
Mounting Kits:	
Right Hand Mounting Bracket Kit	05-10001-201
Left Hand Mounting Bracket Kit	05-10000-201

Handwritten right: SENSOR 32-50013-204 REFLECTIVE TAPE 50-80015-016 ENCODER 01-10003-201

Handwritten bottom: BRACKET FOR CABLE PROTECTION P/N

Bryce™

Office Systems

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U.S.A.
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Fax: 1 - (203) 729 - 5397

OEM

P/N 90-00501-001   Printed in U.S.A.