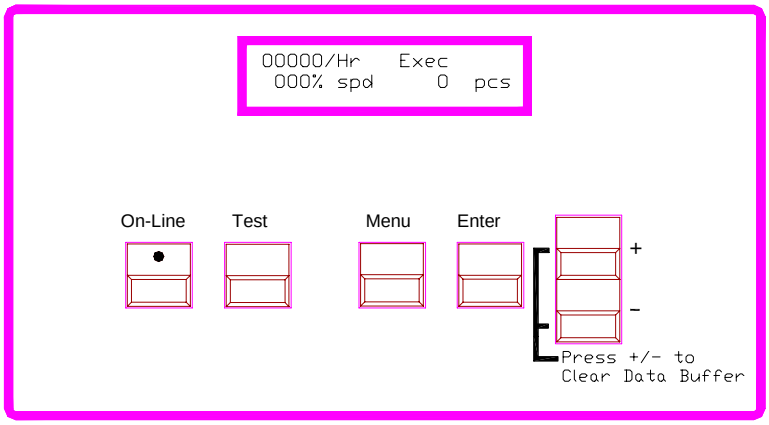
WINKJET

TECHNICAL MANUAL

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.

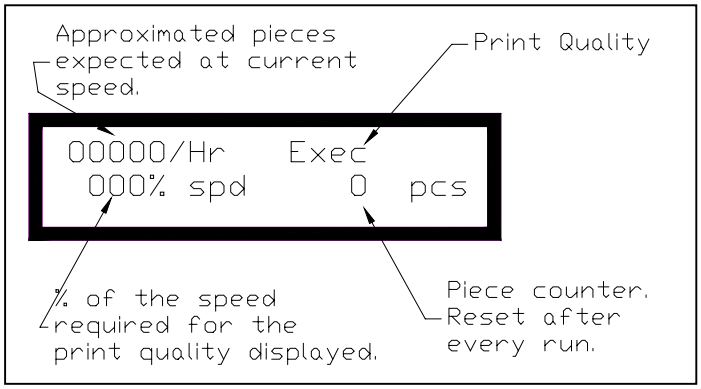
The control button definitions are:



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?



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, SETUP MENU`. *Italics* are used to define the function of the printer menu option.

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.
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.

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.
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

Menu Items	Selections	Explanation
		from the Right edge of the media.
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.

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 Dingbat	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.

Menu Items	Selections	Explanation
	Hancock Marina Quincy Silicon Springer Stencil Windmill Names of fonts that are recognized from the PCMCIA Card slot will be added to the end of the list of selections.	
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 Off	Select the US Postal Service Postnet Barcode options from the following selections: 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

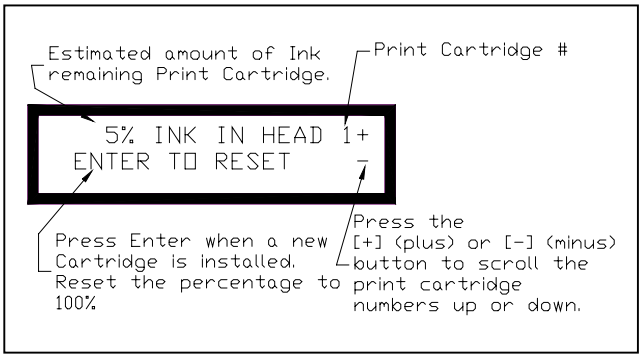
This menu item is to clean the ink jet cartridge nozzles. The purge process fires all the ink jet nozzles onto a piece of media to dislodge and clear any dried ink on the print nozzles. Often this will return the print quality to a normal level.

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%.



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.

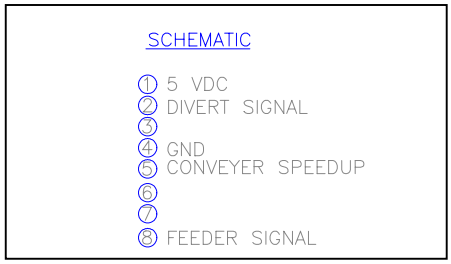
Menu Items	Selections	Explanation
A. Symbol Set	ISO 6 ANSI ASCII ISO 69 FRENCH ISO 21 GERMAN ISO 4 UK ISO 60 NORW / DAN ISO 11 SWED / FIN ISO 15 ITALIAN ISO 17 SPANISH ISO 61 NORW / DAN ISO 10 SWED / FIN ISO 16 PORTUGUESE ISO 8859 ROMAN 8 WINDOWS LATIN 1 PC 8	Match the printers' International Standards 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	This option will convert the Main Menu and Setup Menu to their translations in the listed languages.

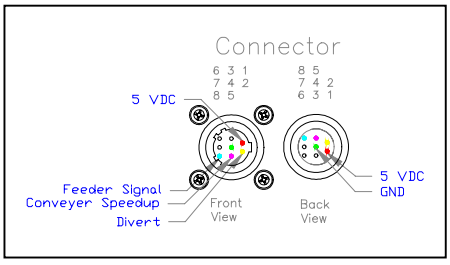
7. DIVERTER CONTROL

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.



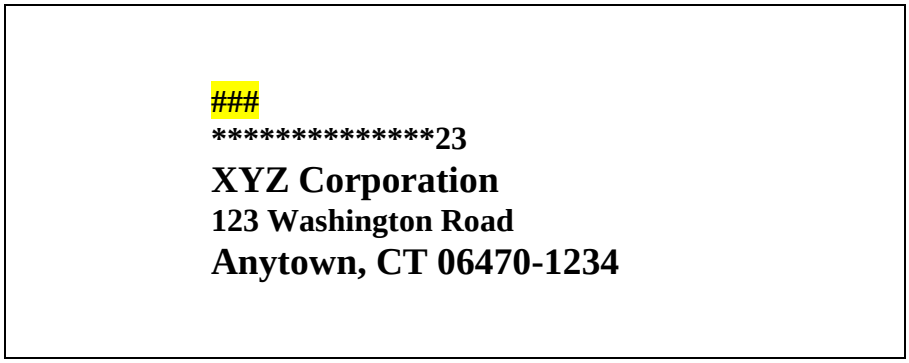


8. POSTAL BUNDLE BRK (BREAK)

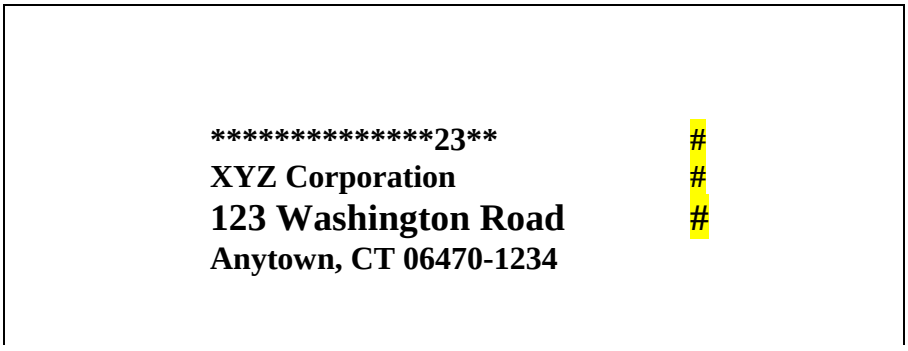
Use this option in conjunction with a variable speed conveyor to temporarily increase the speed of the conveyors transport belt. The increased speed of the conveyor will make a noticeable gap between the finished batch of printed records and the next batch of records being printed.

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.



Example of using a series of 3 '#' characters in the Vertical Break Marker setting to pause the printer.



Menu Items	Selections	Explanation
B. Break 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	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**

B. Break 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.
C. 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. Conveyor distance	024 to 255	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. PRE-PURGE

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

Menu Items	Selections	Explanation
	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.

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

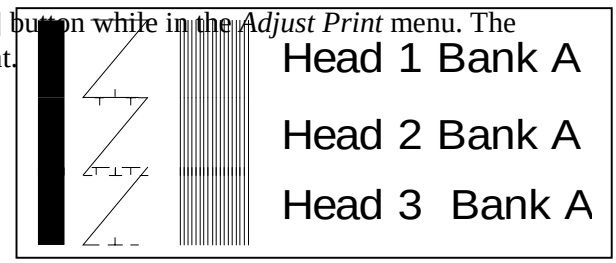
The following steps are for synchronizing the Print Cartridges on the 3 Head Print Assembly (Bank A) and the 3 Head Print Assembly (Bank B), and the optional 3 Head Print Assemblies (Bank C & D). Employ the options Q. BANK A to T. BANK D to help in combining the 3 Head Print Assemblies for printing together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

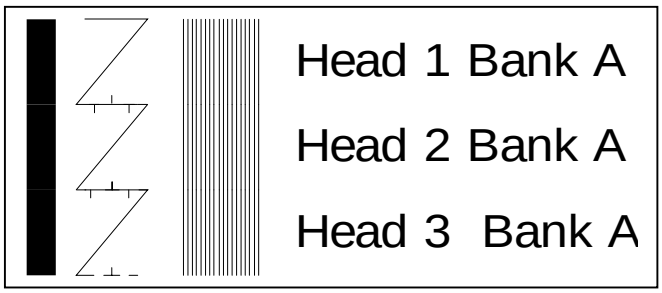


In this example the crooked line in the center indicates Print Cartridge #3 has to have the printer perform a vertical print adjustment. The example shows Print Cartridge #3 is too high.

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.

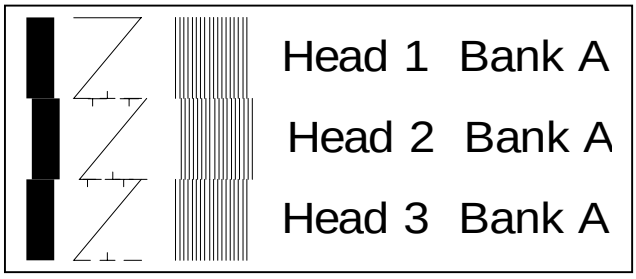


i. Head 2 side to side j. Head 3 Side to Side k. Head 5 Side to Side l. Head 6 side to side M. Head 7 side to side N. Head 9 side to side O. Head 11 side to side P. Head 12 side to side	01 to 99 Press the [**Test]** button to print out a Test Pattern. Check the Test Pattern to determine which Print Cartridges 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.

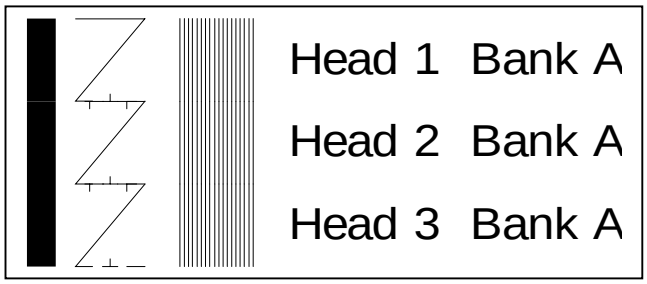
Scroll through the Adjust Print menu options until the *HEAD 2 SIDE TO SIDE* option is displayed on the LCD panel. Select this menu item to change the settings.

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.

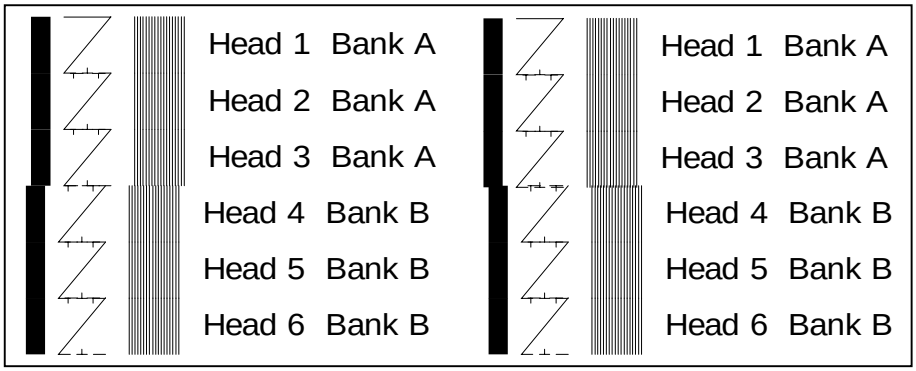


Q. Bank A to Sensor R. Bank B to Sensor S. Bank C to Sensor T. Bank D to Sensor	00.500 to 36.000 Press the [**Test]** button to print out a Test Pattern. Check the Test Pattern to determine where Banks A, B, C or D are printing on the media.	Use this option to set this distance between the sensor and 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.

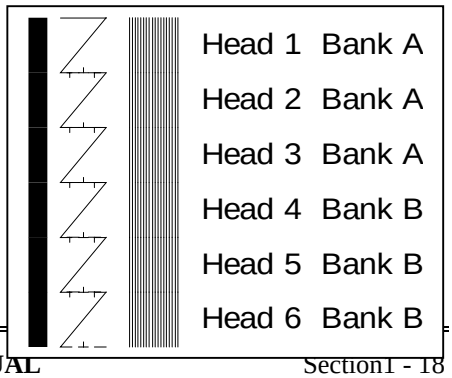
For ease of illustration the following example will deal with synchronizing Bank A and Bank B together. It is assumed the Banks of Print Heads have already been mechanically aligned next to each other. The same techniques used for Bank A and Bank B can be applied to synchronize any of the other Banks.

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.



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.

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.

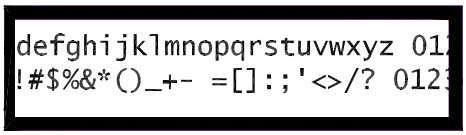
Menu Items	Selections	Explanation
	Press the [**Enter]** button to select this option. As soon as, the [**Enter]** button is pressed, the printer will be in the test mode.	The test display will scroll characters across the top and bottom of the LCD display.

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



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 W-InkJet 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 Bad Centronic (Parallel) cable.	Turn printer off then back on and send data again. Reset Baud rate in printer or computer. 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 Bad processor board	Use W-InkJet 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. Call Service Representative.

Notes:

Preventative Maintenance:

The WINKJET 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.

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.

Cleaning the print cartridges

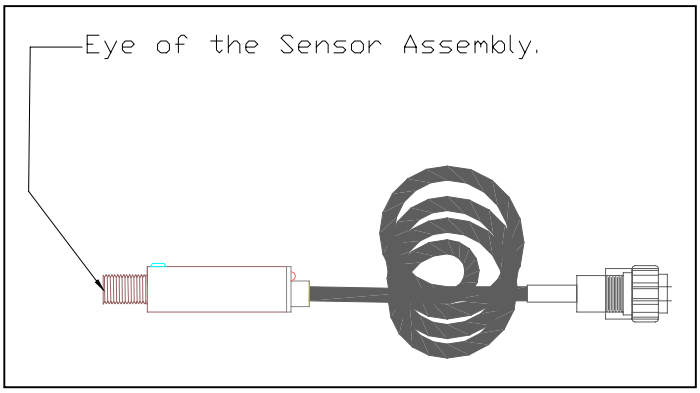
If the print quality is unacceptable select the Purge Print Head function from the Main Menu (See Section Purge Print Head). If problems still persist then do the following:

- 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.

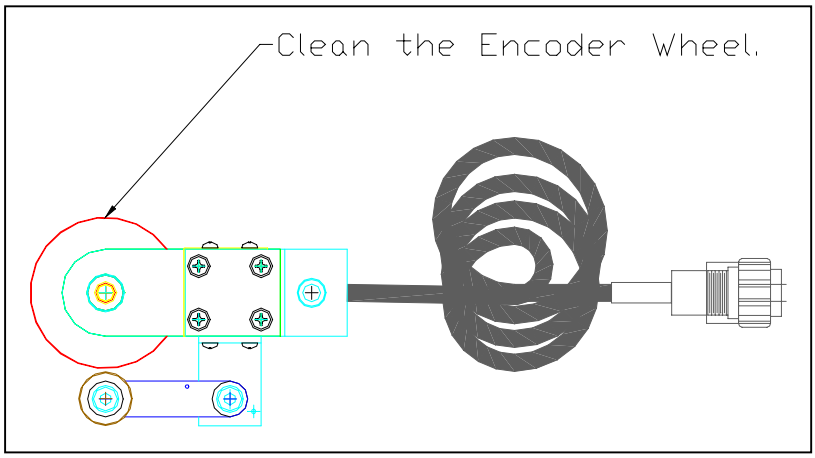
Cleaning the Photo Sensor Assembly

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).



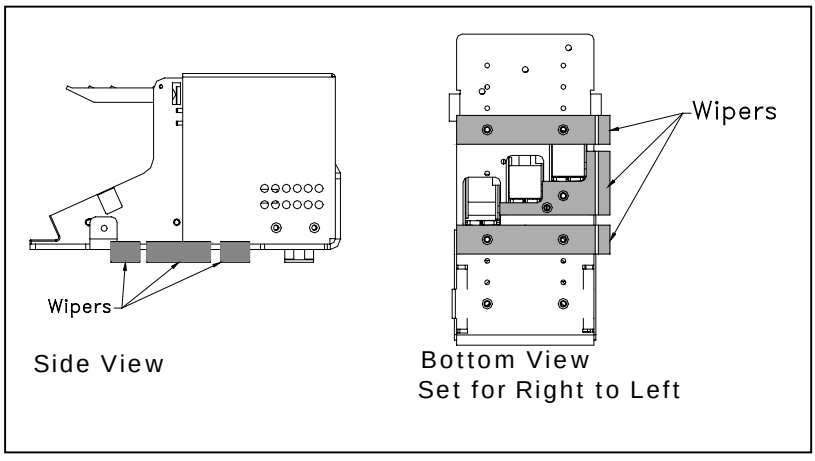
Cleaning the Encoder Assembly

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 Wipers

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.



Appendix A • WINKJET **MAIN MENU** Flow Chart

----MAIN MENU----						
1. Address Layout	Address Layout **A. Distance from Left**	DIST FROM LEFT +MORE *4.50 in -LESS	DIST FROM LEFT +MORE *100 mm -LESS			
	Address Layout **B Distance from Top**	DIST FROM TOP +MORE *2.00 in -LESS	DIST FROM TOP +MORE *50 mm -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**.

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

----MAIN MENU----						
2. Print Quality	Print Quality *Executive	Print Quality Letter	Print Quality Draft	Print Quality Super Draft		

----MAIN MENU----						
3. Font	FONT ②**A. Name**	③FONT NAME *Courier	FONT NAME Sans Serif	FONT NAME Roman	FONT NAME Baxter	FONT NAME Dingbat
		FONT NAME Hancock	FONT NAME Marina	FONT NAME Quincy	FONT NAME Silicon	FONT NAME Springer
		FONT NAME Stencil	FONT NAME Windmill			
	FONT **B. Size**	FONT SIZE +LARGER *12 point -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	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 • WINKJET **MAIN MENU** Flow Chart

----MAIN MENU---- **5.Address Recovery**	ADDRESS RECOVERY **A. Get Address**	02: John P. Jones Hit Recover ENTER to	NONE TO RECOVER.
	ADDRESS RECOVERY **B. Clear Memory**	Clear the +YES Address Buffer? -NO	

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

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

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

----MAIN MENU---- **9. Image Overlay**	IMAGE OVERLAY **A.Clear Overlay**	CLEAR OVERLAY Press Enter to Clear	CLEAR OVERLAY Exit
	IMAGE OVERLAY **B.Print Overlay First**	PRINT OVERLAY FIRST *Enable	PRINT OVERLAY FIRST Disable

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

----MAIN MENU---- **11. Reset Ink Count**	100% INK IN HEAD 1 + ENTER TO RESET -	100% INK IN HEAD 2 + ENTER TO RESET -	100% INK IN HEAD 3 + ENTER TO RESET -
	100% INK IN HEAD 4 + ENTER TO RESET -	100% INK IN HEAD 5 + ENTER TO RESET -	100% INK IN HEAD 6 + ENTER TO RESET -
	100% INK IN HEAD 7 + ENTER TO RESET -	100% INK IN HEAD 8 + ENTER TO RESET -	100% INK IN HEAD 9 + ENTER TO RESET -
	100% INK IN HEAD 10 + ENTER TO RESET -	100% INK IN HEAD 11 + ENTER TO RESET -	100% INK IN HEAD 12 + ENTER TO RESET -

Appendix A • WINKJET **SETUP MENU** Flow Chart

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

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

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

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

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

----SETUP MENU----	LANGUAGE	ISO CHARACTER SET	ISO CHARACTER SET	ISO CHARACTER SET	ISO CHARACTER SET	ISO CHARACTER SET	ISO CHARACTER SET
6. Language	**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 CHARACTER SET ISO 15 ITALIAN	ISO CHARACTER SET ISO 17 SPANISH	ISO CHARACTER SET ISO 61 NORW / DAN	ISO CHARACTER SET ISO 10 SWED / FIN	ISO CHARACTER SET ISO 16 PORTUGUESE	ISO CHARACTER SET ISO 8859
		ISO CHARACTER SET ROMAN 8	ISO CHARACTER SET WINDOWS LATIN 1	ISO CHARACTER SET PC 8			
	LANGUAGE **B. Inch/Millimeter**	MEASUREMENT UNITS *Inch	MEASUREMENT UNITS Millimeter				
	LANGUAGE **C. Menu Language**	DISPLAY LANGUAGE *English	DISPLAY LANGUAGE German	DISPLAY LANGUAGE French	DISPLAY LANGUAGE Italian	DISPLAY LANGUAGE Spanish	DISPLAY LANGUAGE Dutch
		DISPLAY LANGUAGE Polish					

----SETUP MENU----	DIVERT CONTROL	DIVERTER DIST. +MORE
7. Diverter Control	A. ④**Diverter Distance**	*60.0 inches -LESS
	DIVERT CONTROL **B. ④Media Length**	MEDIA LENGTH +MORE *05.0 inches -LESS

----SETUP MENU----	POSTAL BUNDLE BREAK	ENABLE/DISABLE BREAK	ENABLE/DISABLE BREAK	ENABLE/DISABLE BREAK
8.Postal Bundle Brk	**A.Enable/Disable**	*Off	Vertcal	Horizontal
	POSTAL BUNDLE BREAK B.③**Break Character**	BREAK CHAR +NEXT *{*} -PREV		
	POSTAL BUNDLE BREAK **C.Break Char Count**	CHAR COUNT +MORE *06 -LESS		
	POSTAL BUNDLE BREAK **D.Conveyor Distance**	CONVEYOR DIST. +MORE *024 inches -LESS		

----SETUP MENU----	PRE-PURGE	PRE-PURGE
9.Pre-Purge	*Disable	Enable

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

----SETUP MENU----	ROM REV = P72693
11. Rom Revision #	MAINTCOUNT=12345678

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″.

Appendix A • WINKJET **SERVICE MENU** Flow Chart

---SERVICE MENU--- **1. Adjust Print**	ADJUST PRINTING Head 2 up down	MOVE HD 2 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 3 up down	MOVE HD 3 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 5 up down	MOVE HD 5 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 6 up down	MOVE HD 6 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 8 up down	MOVE HD 8 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 9 up down	MOVE HD 9 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 11 up down	MOVE HD 11 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 12 up down	MOVE HD 12 VERT +UP *297 press test -DOWN
	ADJUST PRINTING Head 2 side to side	MOVE HD 2 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 3 side to side	MOVE HD 3 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 5 side to side	MOVE HD 5 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 6 side to side	MOVE HD 6 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 8 side to side	MOVE HD 8 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 9 side to side	MOVE HD 9 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 11 side to side	MOVE HD 11 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING Head 12 side to side	MOVE HD 12 <-> +LEFT *23 press test -RGHT
	ADJUST PRINTING BANK A TO SENSOR	MOVE BANK A <-> +RGHT *05.000″ test -LEFT
	ADJUST PRINTING BANK B TO SENSOR	MOVE BANK B <-> +RGHT *05.000″ test -LEFT
	ADJUST PRINTING BANK C TO SENSOR	MOVE BANK C <-> +RGHT *05.000″ test -LEFT
	ADJUST PRINTING BANK D TO SENSOR	MOVE BANK D <-> +RGHT *05.000″ test -LEFT

---SERVICE MENU--- **2. Test System**	debug p 0.00 ips

---SERVICE MENU--- **3. Test Display**	abcdefghijklmnopqrst ABCDEFGHIJKLMNOPQRST	scrolls for 3 seconds then stops

HEX CHART

		MSB							
	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
LSB 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

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 WINKJET Industrial Printer emulates the listed PCL 5 printer command codes. The WINKJET 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.

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)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
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

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
Height	←(s#V	1B 28 73 #..# 56	027 040 115 #..# 086	Point Size #/72 inch (1/28 cm)
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%)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
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			

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
	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
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%)

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
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

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
	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)
	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

PCL parameterized escape sequences

Printer Feature	Printer Command	HEX Equivalent	DEC Equivalent	Description
	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
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 300 Dots /inch (2.54 cm) for Horizontal and 300 Dots /inch (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 WINKJET 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	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 nnnnnnnnnnn	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.

WINKJET CHARACTER SET

(Modeled after PC 850 Character Table)

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	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	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	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	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	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	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	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	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	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
11	<ESC> 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	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	¯

WINKJET 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	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	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
11	<ESC> 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).

WINKJET CHARACTER SET

(Modeled after Roman -8 Character Table)

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	º 179	û 195	Æ 211	Đ 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	Í 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	Ô 223	ÿ 239	255

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

WINKJET 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	ƒ 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
11	<ESC> 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.

WINKJET CHARACTER SET

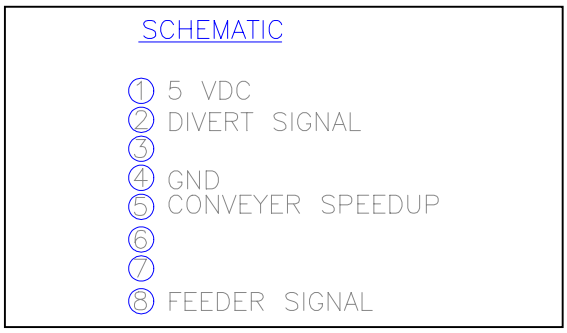
(Modeled after PC - 8 Character Table)

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	º 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).

Accessory Port:

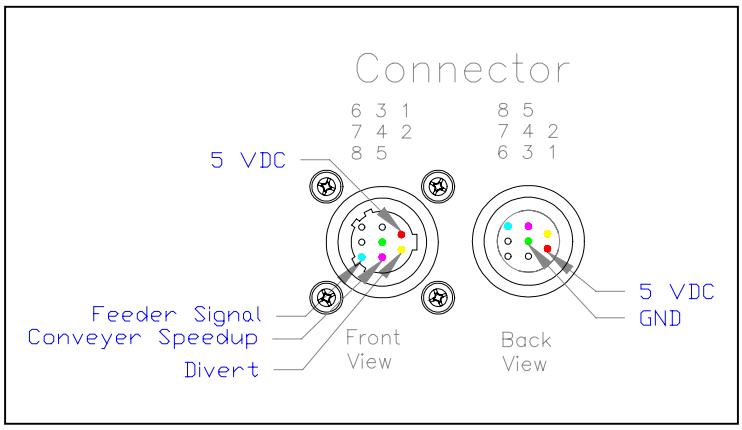
The Accessory Port allows the printer to work in conjunction with a Diverter Arm, a Feeding Device and a variable Speed Conveyor. Use the Accessory Port to connect the printer to either one or all of these devices.



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.

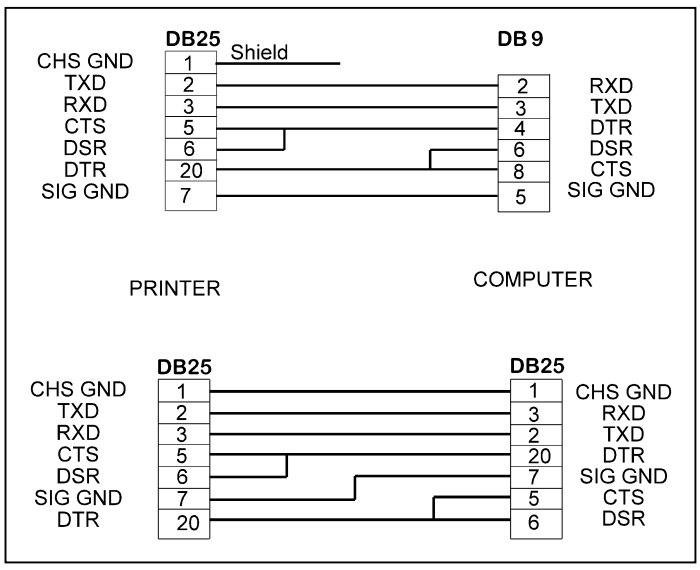


The printer will send a 40 millisecond pulse signal to stop to the feeder only if:

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.

Note: Place the Sensor Assembly close to the Feeder Assembly to limit the number of blank pieces thrown onto the transport due to inertia.

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 5.



Serial Communication (RS - 232 C) connections for the Industrial Printer

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

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 WINKJET 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

The Address Printer uses the data sent down on the last line to print the DPBC. Specifications for a valid addresses can be found in the Domestic Mail Manual (DMM).

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 or ZIP + 4 + 3 digits are allowed by the USPS to appear in the address block.

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 + 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.

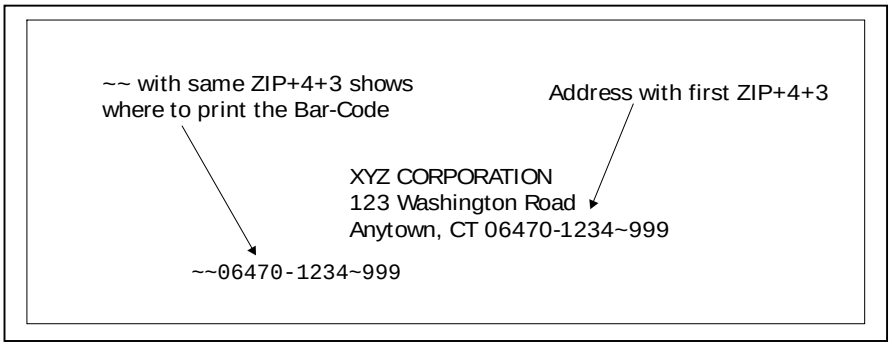
ZIP + 4 + 3

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.

Special Feature

To customize the position of the Delivery Point Barcode (DPBC) Code on the media the ZIP+4+3 must be sent twice. Once on the last line of the record. The Second one sets the location of the DPBC and must be preceded by two tildes (~~).

Example:



Note: Special care must be taken to use a fixed spacing font when customizing the position of the DPBC. Courier or Courier New style font is recommended when using the two tildes positioning option in the record.

Glossary

baud rate

The rate at which data is transferred between the computer and the printer. The computer and printer must be set at the same baud rate for information to transfer correctly.

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 Assemblies 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.

RS-232 serial interface

A standard serial interface for connecting the computer to peripheral devices.

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.