



Videojet 1610 Dual Head

Operator Manual Addendum

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Videojet 1610 Dual Head Printer

The Videojet 1610 Dual Head (DH) printer is a continuous ink jet printer that can print fixed and variable codes at elevated line speeds on consumer and industrial products.

The most important feature of the printer lies in the Dual Head configuration which differentiates this printer from the other 1000 line series printers. It has the same architecture and features as the Videojet 1610 printers. The printer can print text, characters, logos and graphics (up to 34 dots high) using one or both printheads in two different modes.

There are two printers available based on two different modes:

- Videojet 1610 Dual Head with System Mode
- Videojet 1610 Dual Head with Independent Mode

The printer with *System* mode (S-Mode) is the standard model. The printer with *Independent* Mode (I-Mode) is an advanced model with the optional I-Mode feature. Both the printers can operate in S-Mode. Only the printer purchased with I-Mode set up, can run in independent mode.

System Mode

In *System* mode configuration, either one or both the printheads operate on a single production line. It supports one product detector and one encoder input to control both printheads. Both the printheads print on the same product. Each printhead can print a separate message.

Independent Mode

In *Independent* mode, either one or both the printheads operate on up to two different production lines. The printheads can operate independently. Thus, I-Mode configuration allows up to two product detectors and two encoder inputs to support independent printing on up to two lines. Each printhead can print a separate message.

Note: A printer with I-Mode can operate as a S-Mode printer but a S-Mode printer cannot be operated as an I-Mode printer. In order to upgrade S-Mode configuration to I-Mode configuration, the connector panel must be replaced. For more information, please contact Videojet Technologies Inc. Customer Service Department at 800.843.3610 (United States only), or contact the local Videojet Technologies Inc. representative.

Note: Each printhead must be set up separately before printing.

About the Manual

This addendum is written for the operators of Videojet 1610 DH printer. The document describes the significant differences between the Videojet 1610 DH printer and the Videojet 1610 printer. Therefore, this addendum must be read in conjunction with Videojet 1610 Operator Manual (P/N 462128).

Related Publications

The following manuals is available for reference:

- Videojet 1610 Operator Manual, Part Number: 462128
- Videojet 1610 DH Service Manual Addendum, Part Number: 462220
- Videojet 1610 Service Manual, Part Number: 462129

Language Codes

When you order these manuals, make sure to add the 2-digit language code at the end of the part number. For example, the spanish version of the operator manual is part number 462219-04. Table 1-1 on page 1-3 shows the list of language codes that you can use to identify the translated versions of this manual.

Note: The availability of the Operator Manual Addendum is indicated by an asterisk (*). Availability of the Service Manual is indicated by a plus sign (+). For more information, contact the Videojet distributor or subsidiary.

Code	Language	Availability (see note)	
01	English (US)	*	+
02	French	*	
03	German	*	
04	Spanish	*	
05	Portuguese Brazilian	*	
06	Japanese	*	
07	Russian	*	
08	Italian	*	
09	Dutch	*	
10	Chinese (Simplified)	*	+
11	Arabic	*	
12	Korean	*	+
13	Thai	*	
15	Norwegian	*	
16	Finnish	*	
17	Swedish	*	
18	Danish	*	
19	Greek	*	
20	Hebrew	*	
21	English (UK)	*	+
23	Polish	*	
24	Turkish	*	
25	Czech	*	
26	Hungarian	*	
33	Vietnamese	*	
34	Bulgarian	*	
36	Chinese (Traditional)	*	

Table 1-1: Language Codes

Content Presentation

This addendum contains different types of information like safety guidelines, additional notes, user interface (UI) terminology and so on.

Refer to Chapter 1, “Introduction” of the Videojet 1610 Operator Manual (P/N 462128) for complete information on these topics.

The Word ‘Printer’

The word ‘printer’ indicates the ‘Videojet 1610 Dual Head printer’, from this point onwards, in this manual.

In specific, Standard printers with S-Mode will be referred to as ‘Printer (S)’ and printers with I-Mode will be referred to as ‘Printer (I)’.

Safety Information

The safety information includes warning and caution statements.

Warning

The warning statements indicate hazards or unsafe practices that can cause severe personal injury or death. For example:



Warning

PERSONAL INJURY. The cleaning agent is poisonous if taken internally. Do not drink. Seek medical attention immediately if ingested.

Caution

The caution statements indicate hazards or unsafe practices that can cause damage to the equipment. For example:



Caution

EQUIPMENT DAMAGE. Do not fit or remove any connector on the printer when the power is turned on. The failure to follow this caution can damage the printer.

Chapters in the Manual

Chapter No.	Chapter Name	Description
1.	Introduction	Contains the information about this manual, the related publications, and writing styles used in this manual
2.	Safety	Contains the safety and hazard information
3.	Main Parts	Describes the main parts of the printer
4.	Printer Operation	Contains the information on how to set up and operate the printer
5.	User Interface	Explains how to use the UI to create and save messages
6.	Maintenance	Contains the information on how to maintain and clean the printer
7.	Troubleshooting	Contains the operator level diagnostic and troubleshooting procedures
8.	Specifications	Contains printer specifications

Table 1-2: List of Chapters

Introduction

The policy of Videojet Technologies Inc. is to manufacture non-contact printing/coding systems and ink supplies that meet high standards of performance and reliability. We enforce strict quality control techniques to eliminate potential defects and hazards in our products.

The intended use of the printer is to print information directly onto a product. Use of this equipment in any other fashion may lead to serious personal injury.

The safety guidelines provided in this chapter are intended to educate the technicians on all safety issues so that the printer is serviced and operated in a safe manner.

Refer to the Chapter 2, “Safety” of Videojet 1610 Operator Manual (P/N 462128) for the following safety related information:

- General Safety Guidelines
- Electrical Safety Guidelines
- Fluid Safety Guidelines
- Compressed Air Safety Guidelines
- UI Related Safety Guidelines
- Other Important Guidelines



Caution

EQUIPMENT DAMAGE. Make sure the printer operates with approved fluids only.

Main Parts

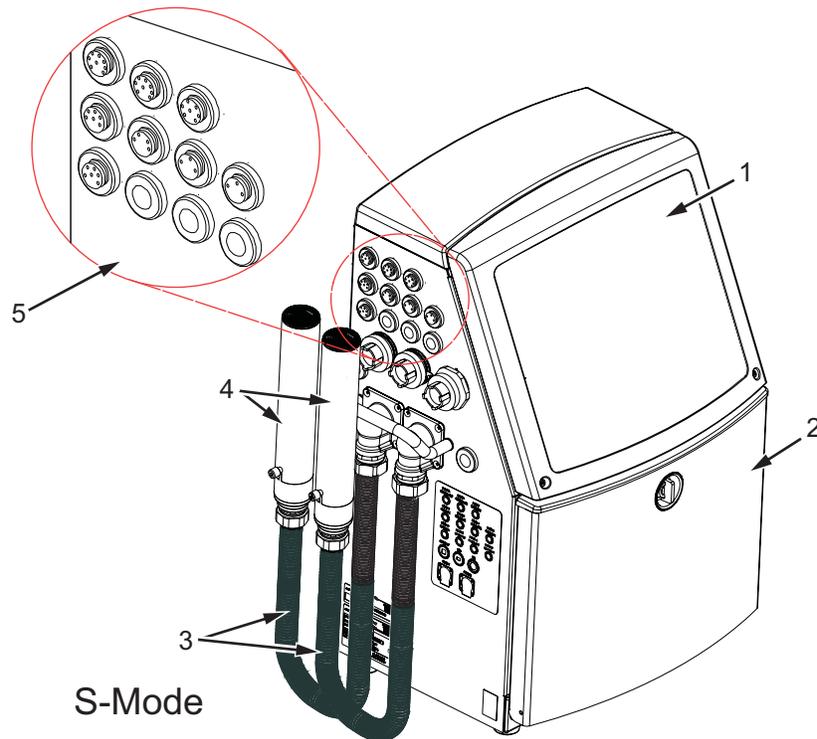
3

This section describes the main parts of the printer. The connector panel and printhead with umbilical are illustrated in detail for the 1610 DH printer.

For other assemblies, refer to the Videojet 1610 Operator Manual (P/N 462128) for complete information:

- Control Panel Information
- Ink Compartment
- Main Power Switch
- Ink System Filter

Videojet 1610 Dual Head Printer

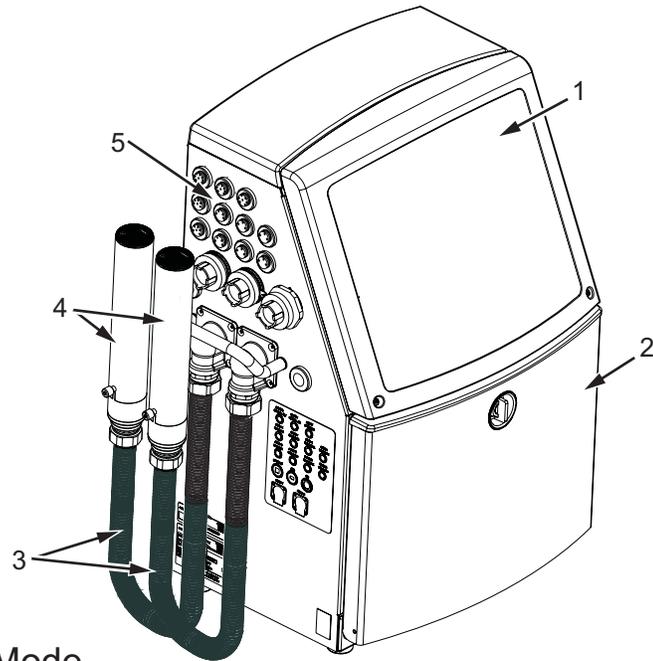


- | | |
|--------------------|------------------------------|
| 1. Control Panel | 5. Connector Panel* |
| 2. Ink Compartment | 6. Electronics Compartment** |
| 3. Umbilical | 7. Main Power Switch** |
| 4. Printhead | 8. Ink System Filter** |

*The connector panel is provided with three ports with plugs.

**The components are not shown in the picture.

Figure 3-1: Main Parts of the Printer



I-Mode

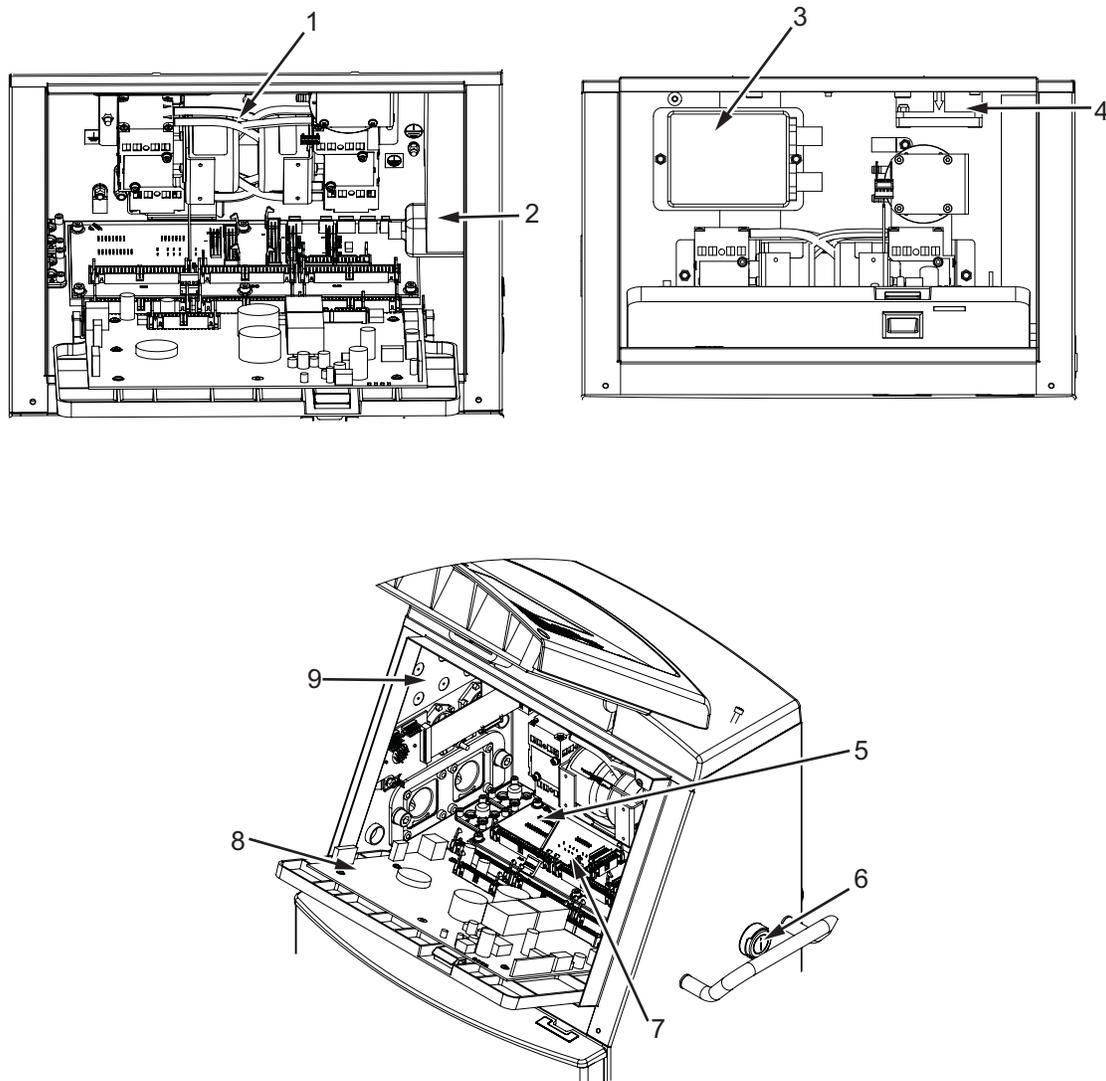
- | | |
|--------------------|-----------------------------|
| 1. Control Panel | 5. Connector Panel |
| 2. Ink Compartment | 6. Electronics Compartment* |
| 3. Umbilical | 7. Main Power Switch* |
| 4. Printhead | 8. Ink System Filter* |

*The components are not shown in the picture.

Figure 3-2: Main Parts of the Printer (I)

Electronics Compartment

The electronics compartment contains the parts shown in Figure 3-3.



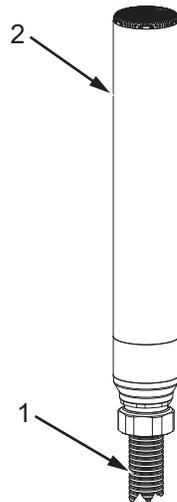
- | | |
|-----------------------------------|----------------------------------|
| 1. Double Headed Air Pump | 6. Main Power Switch |
| 2. Power Supply Unit | 7. Printer Interface Board (PIB) |
| 3. Extra High Tension (EHT) Block | 8. Control System Board |
| 4. Electronics Compartment Fan | 9. Connector Panel Boards |
| 5. Electronics Compartment | |

Figure 3-3: Electronics Compartment

Note: When a customer orders a Videojet 1610 DH printer with an air dryer, the double headed air pump is removed from the printer. The air dryer supplies positive air to the printhead from an external air source. Air dryers are required when the printer is operated in an environment with elevated humidity or certain water sensitive inks are used. Please contact Videojet Technologies Inc. Customer Service Department at 800.843.3610 (United States only), or contact the local Videojet Technologies Inc. representative for more information.

Printhead and Umbilical

The printhead uses the ink supplied by the ink core module to print the text and graphic characters on a product. The control signals and ink are sent to the printhead through the umbilical.



- 1. Umbilical
- 2. Printhead

Figure 3-4: Printhead and Umbilical

In Dual Head configuration, both the printheads have the same design. The printheads operate at an offset of up to two meters relative to each other. The two printheads are independently controllable. Each printhead must be set up separately.

The printheads can operate in two modes:

- System Mode
- Independent Mode

Refer to “Videojet 1610 Dual Head Printer” on page 1-1 for more information on the different modes.

System Mode

Use one or two printheads to print on a single product line. Each printhead is set up separately and can print a different message.

Independent Mode

Use one or two printheads to print on up to two product lines. Each printhead is set up separately and can print a different message.

Connector Panel

The connector panel is on the left side of the printer (item 5, Figure 3-1 on page 3-2 and Figure 3-2 on page 3-3). The panel contains the connectors shown in Figure 3-5 on page 3-8 for Printer (S) and Figure 3-6 on page 3-9 for Printer (I).

Note: The number of connectors provided depends on the model you select.

Note: To reconfigure your system from S-Mode to I-Mode, contact your Videojet Technologies Inc. representative.

Table 3-1 provides the connectors for the printer.

Connector Type	PCB	Standard	Optional
COM 2 RS 232/485	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
COM 1 RS 232/485	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Relay Switches	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Head 1, Beacon	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Head 1, Encoder	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Head 1, Trigger 2	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode

Table 3-1: Connector Panel

Connector Type	PCB	Standard	Optional
Head 1, Trigger 1	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Head 2, Beacon	PCB 7	Videojet 1610 DH	
	PCB 6		Videojet 1610 DH with I-Mode
Head 2, Encoder	PCB 6		Videojet 1610 DH with I-Mode
Head 2, Trigger 2	PCB 6		Videojet 1610 DH with I-Mode
Head 2, Trigger 1	PCB 6		Videojet 1610 DH with I-Mode
Ethernet	-	Videojet 1610 DH	Videojet 1610 DH with I-Mode
USB	-	Videojet 1610 DH	Videojet 1610 DH with I-Mode
I/O	PCB 4	Videojet 1610 DH	Videojet 1610 DH with I-Mode

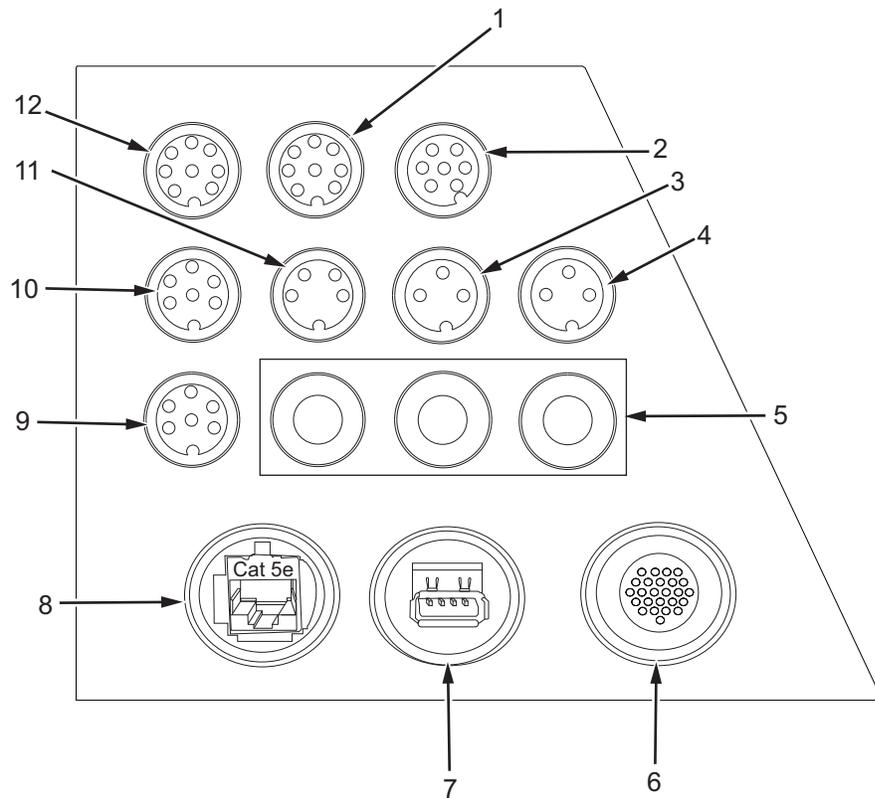
Table 3-1: Connector Panel (Continued)

Notes:

Head 2 connectors are not used in Printer (S).

Printer (I) are configurable in either S-Mode and I-Mode. Printer (S) cannot be operated in I-Mode.

If you require the printer in S-Mode, the printer will be shipped with PCB 7 (eight ports and three blanking plugs). If you require the printer in I-Mode, the printer will be shipped with PCB 6 (eleven ports).



- | | |
|--------------------------|--------------------------|
| 1. COM 1, RS 232/ RS 485 | 8. Ethernet |
| 2. Relay Switches | 9. Head 2, Beacon |
| 3. Head 1, Trigger 2* | 10. Head 1, Beacon |
| 4. Head 1, Trigger 1* | 11. Head 1, Encoder |
| 5. Blanking Plugs | 12.COM 2, RS 232/ RS 485 |
| 6. I/O 25 Way | |
| 7.USB | |

* - The connectors are used for both Head 1 and Head 2 Trigger, though it is labeled as Head 1, Trigger 1 and Head 1, Trigger 2.

Figure 3-5: Connector Panel (S-Mode) - PCB 7

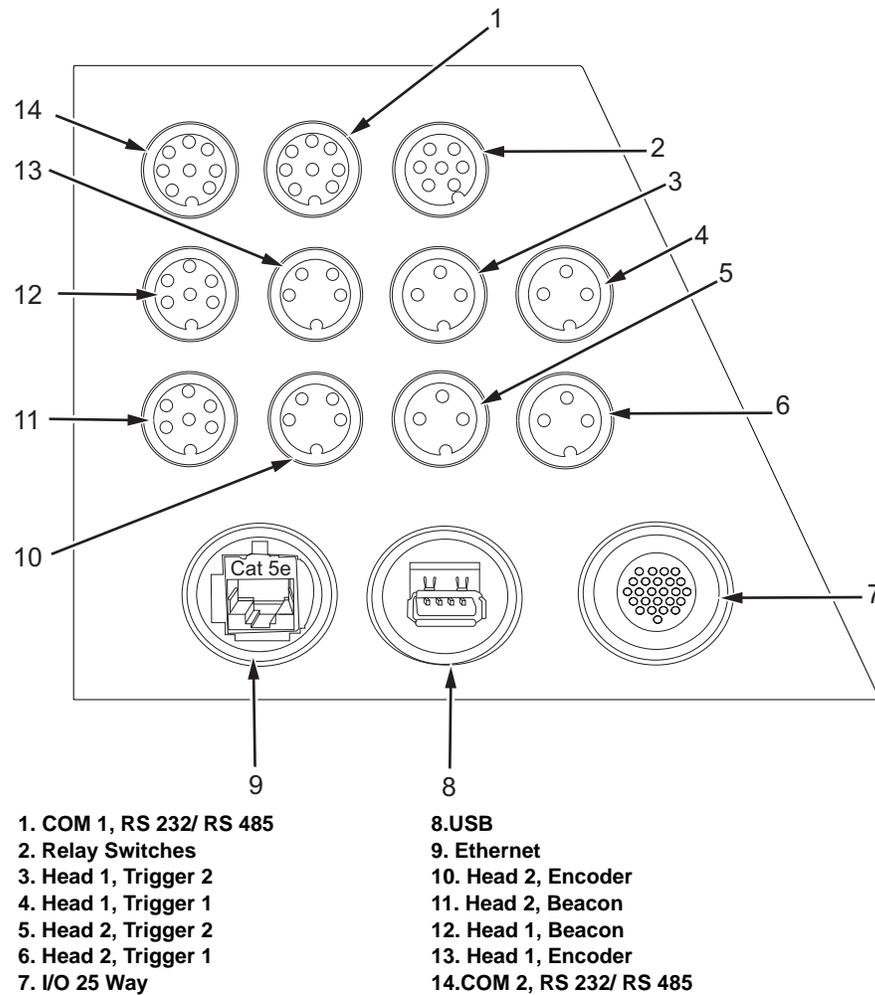


Figure 3-6: Connector Panel (I-Mode) - PCB 6

Note: All the connectors are sealed to provide the required protection from water and dust according to the IP65 standard.

Note: Two Communications ports are available which can be configured to RS-232 or RS-485 by a user selectable link. When configured to RS-232, hardware flow control (handshaking) is available for both Communication port 1 and port 2. Refer to the Service Manual for more information.

Pinout Information

Part Number	Connector	Pinout
500-0036-584	COM 2 RS 232/485	DIN 8 Pin
	COM 1 RS 232/485	DIN 8 Pin
500-0036-583	Relay Switches	DIN 7 Pin
500-0036-577	Head 1, Beacon	DIN 6 Pin
	Head 2, Beacon	DIN 6 Pin
500-0036-581	Head 1, Encoder	DIN 4 Pin
	Head 2, Encoder (I-Mode only)	DIN 4 Pin
500-0036-578	Head 1, Trigger 2	DIN 3 Pin
	Head 1, Trigger 1	DIN 3 Pin
	Head 2, Trigger 2 (I-Mode only)	DIN 3 Pin
	Head 2, Trigger 1 (I-Mode only)	DIN 3 Pin
399083	Ethernet	-
399084	USB	-
399475	I/O	DIN 25 Pin (Bulgin)
500-0076-141	Din Dust Cap Plug	-

Table 3-2: Pinout Information

Introduction

This document provides the procedures to do the following tasks:

- Clean start and clean stop the printer
- Quick start and quick stop the printer
- System Menu
- Calibrate Menu
- Printer Configuration
- Print the Messages

For more information on the topics listed below, please refer to the Videojet 1610 Operator Manual (P/N 462128):

- Turn on the printer
- How to Set the Passwords
- How to Configure Ethernet Port
- How to Enter Service Information
- Data Logging Menu
- How to Configure the Serial Port
- High Speed Remote Data Transfer
- How to Create a Message
- Manual Print
- Continuous Print
- DIN Print
- Turn off the printer



Caution

Make sure that the right head is selected for the task you are performing.

Important Notes

Note 1: The user must be at password level 2 to access these options.

Note 2: The operating head is displayed on the bottom right corner of the screen.

For example,



Note 3: The alarm/warning messages are prefixed with (1) or (2) indicating the printheads.

For example,



Note 4: Press F3 to toggle between the two heads when on a menu.

How to Clean Start and Clean Stop the Printer

The default procedures to start and stop the printer are the Clean Start and the Clean Stop.

Note: If the Clean Start or the Clean Stop are not available, the printer requests a Quick Start or Quick Stop. The printer cannot provide the Clean Start and the

Clean Stop options if the make-up cartridge is empty  or if the ink core high



warning is present. Make sure that the make-up cartridge is not empty.

Caution

PERFORMANCE. Avoid excessive use of Clean Start or Clean Stop. The failure to follow this caution can cause high use of flush and dilution of the ink. The diluted ink decreases the quality of the print.

How to Clean Start

To clean start, do the following tasks:

- 1 Press F1 key for the *Select Head* dialog box to appear.

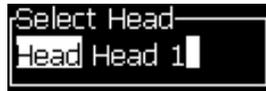


Figure 4-1: Select Head

- 2 Select the required head from the options available using the *Left* and *Right* arrow keys. The options are:
 - Head 1
 - Head 2
 - Both Heads
- 3 Press *Enter*, the printer turns on the ink and the selected head ink jet starts.

Note: To stop the ink jet, press the F1 key.

How to Clean Stop

Press the F1 key. The printer stops the flow of ink.

Note: This command is head specific and starts one head only. To start the second head when one head is running, press 'F3' to select the required head, then select 'F1' to Clean Start.

How to Quick Start and Quick Stop the Printer

Press *CTRL+F1* key to Quick Start the jet. Alternatively, you can Quick Start and Quick Stop the jet by *System > Quick Start Jet* and *System > Quick Stop Jet*.

How to Quick Start

To quick start, do the following tasks:

- 1 Press CTRL+F1 key for the *Select Head* dialog box to appear.

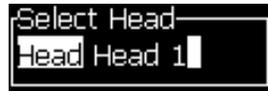


Figure 4-2: Select Head

- 2 Select the required head from the options available using the *Left* and *Right* arrow keys. The options are:
 - Head 1
 - Head 2
 - Both Heads
- 3 Press *Enter*, the printer turns on the ink and the selected head ink jet starts.

Note: To stop the ink jet, press the CTRL+F1 key.

How to Quick Stop

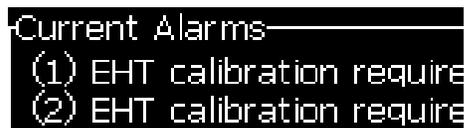
Press the CTRL+F1 key. The printer stops the flow of ink.

Note: This command is head specific and starts one head only. To start the second head when one head is running, press 'F3' to select the required head, then select 'CTRL+F1' to Quick Start.

System Menu

The user can perform the start and stop sequences through *System* menu with the options available as *Head 1*, *Head 2* and *Both Heads*. The user can also see the *Current Alarms*, *Current Warnings* and *Current States* of the printer through *System* menu. The alarm/warning messages are prefixed with (1) or (2) indicating the operating printhead.

For example,



For more information on alarms and warnings, refer Chapter 4 of Videojet 1610 Operator Manual (P/N 462128).

Note: System Menu is different from System Mode (S-Mode). System Mode can be set in Print Menu (refer "Print" on page 5-4).

Calibrate Menu

The *Calibrate* menu includes the controls to setup and calibrate the printer. Refer to the Videojet 1610 Service Manual for more information.

The *Diagnostics* screens are available for both the printheads depending on the printhead selected.

Note: Press F3 to toggle between the two heads when on a menu.

Table 4-1 lists the menu options which are unique to 1610 Dual Head configuration.

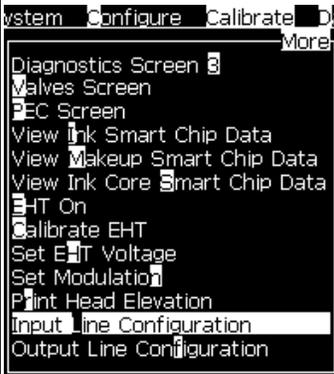
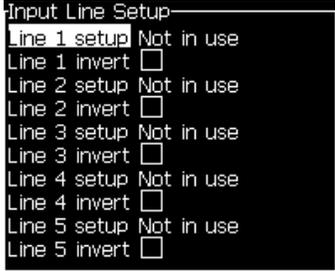
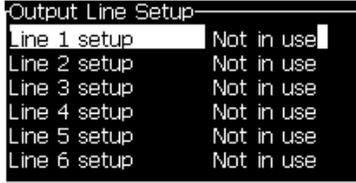
Calibrate Menu	Commands	Function
	Input Line Configuration	<p>Opens the <i>Input Line Setup</i> dialog box. You can configure up to five digital inputs.</p> <p>Inputs:</p> <ul style="list-style-type: none"> • Increment a counter • Reset a counter • Stop a jet 
	Output Line Configuration	<p>Opens the <i>Output Line Setup</i> dialog box. You can configure up to six digital outputs.</p> <p>Outputs:</p> <ul style="list-style-type: none"> • When printhead is enabled • Warnings or alarms • Print complete signal 

Table 4-1: Calibrate Menu and Commands

Product Counter

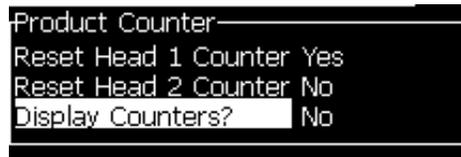


Figure 4-3: Product Counter Dialog Box

You can reset the product counter for Head 1 and Head 2. For more information on how to reset and hide product counter, refer Chapter 4 of Videojet 1610 Operator Manual (P/N 462128).

Print Menu

Note: Press *F1* key to select the required printhead.

The printer is configured through the *Print* menu (see Figure 4-4). Press *Alt+P* to open the *Print* menu.

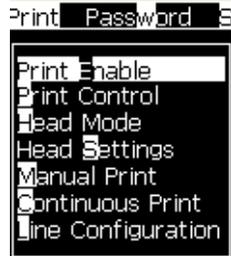


Figure 4-4: Print Menu

Head Mode

In Printer (S), the *Head Mode* will be set up for *System* mode only. In Printer (I), you can change the *Head Mode* between *System* and *Independent*.

Do the following tasks to select the type of head mode:

- 1 Select *Head Mode* from the Print menu.
- 2 Press the *Enter* key to open the *Head Mode* dialog box.



Figure 4-5: Head Mode

- 3 Select the *Head Mode* from the options available. The options are:
 - *System* - In *System mode configuration*, either one or both the printheads operate on a single production line. Each printhead can print a separate message.
 - *Independent* - In *Independent mode*, either one or both the printheads operate on up to two different production lines. Each printhead can print a separate message.
- 4 Press the *Enter* key to set the *Head Mode* and exit the *Head Mode* dialog box.

Print Enable

Select the *Print Enable* option from the *Print* menu. The *Print Enable* dialog box (see Figure 4-6) appears. *You can Enable or Disable Head 1 and Head 2.*

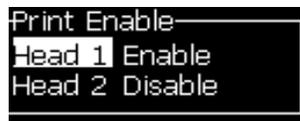


Figure 4-6: Print Enable

Note: *In S-Mode, one printhead cannot be enabled if the other printhead is already enabled. Both the printheads must be disabled first to enable the other printhead.*

Print Control

Select the *Print Control* option from the *Print* menu. The *Print Control* menu appears.

Press F3 key to toggle between the two heads.

Note: *Refer to Videojet 1610 Operator Manual (P/N 462128) for more information on Print Control menu.*

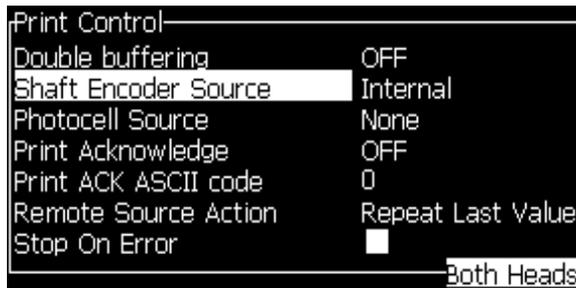


Figure 4-7: Print Control

Photocell Source

The print is activated from the source External (standard-connection option), or None.

Note: Head 1 and Head 2 specific DIN Connections are available.

Remote Source Action

Provides instructions to the printer when the record buffer runs out of data:

- Stop - The printer will stop the print when it reaches the end of the buffer.
- Repeat Last Value - The printer will continue to print the last message when it reaches the end of the buffer.

Head Settings

Select the *Head Settings* option from the *Print* menu (see Table 4-1 on page 4-9).



Figure 4-8: Head Settings

Parameter	Description
Head Offset	Distance between print trigger and printhead in inches.
Throw distance	Distance between the printhead and the product in inches.
Character Height	Height of overall message.
Reverse/Invert	Reversed/Inverted character printing.

Table 4-1: Head Settings

Note 1: Head Offset is the distance between the print trigger and the printhead (in inches). Measure the head offset for both the printheads and input for each head correctly.

Note 2: Product delay (message parameter) is the distance between the edge of the product and the print start position (in inches). The total delay between printhead trigger and print = product delay + head offset.

How to Print Messages

You must select a message before you start the printing process. For information on how to select a message, refer Videojet 1610 Operator Manual (P/N 462128).



Caution

MESSAGE. Make sure that the right head is selected before you select a message for printing. Press F3 key to select the required printhead.

How to Start the Printing

The default sequence is Clean Start.

Enable the print to start the printing (access *Print > Print Enable*). Select *Enable* for the required head.

The jet running icon is prefixed with the operating head number. For

example,  1.

For information on how to start the printing, refer 1610 Videojet 1610 Operator Manual (P/N 462128).

***Note:** To select the specific printhead parameters and photocells, you must select the correct printhead. Press F3 key to select the required printhead. The selected printhead is highlighted on the bottom right hand side of the UI as well as at the bottom of the pop up window.*

How to Stop the Printing

Disable the print to stop the printing (access *Print > Print Enable*). Select *Disable* for the required head.

The jet stop icon is prefixed with the head number indicating the stopped

jet. For example,  2 .

For information on how to stop the printing, refer 1610 Videojet 1610 Operator Manual (P/N 462128).

Introduction

The User Interface contains the Menu screen.

Refer to Chapter 5, “User Interface” of Videojet 1610 Operator Manual (P/N 462128) for complete information on the following topics:

- Menu Description
- To Select the Menus and Items
- To Enter the Text, Numbers and Toggle Values
- Manage Messages
- Manage User Fields
- Manage Text
- Manage Logos

Note: The user must be at password level 2 to access these options.

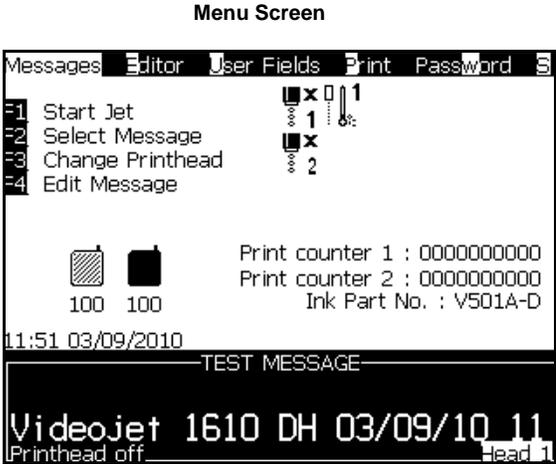


Figure 5-1: Main Screens

Menu Screen

When you login, the first screen that appears is the Menu screen. The Menu screen has a row of menus along the top of the screen. The menus give quick and easy access to the different functions of the printer. You can see only five menus in the screen (see Figure 5-1), use the *Left arrow* key or *Right arrow* key to access the other menus.

Menu Description

This section describes few commands in *Messages*, *System* and *Configure* Menus. Refer to the Videojet 1610 Operator Manual (P/N 462128) for the complete information on the other commands on *Messages*, *Editor*, *User Fields*, *Print*, *Password*, *System*, and *Configure* menus.

Messages

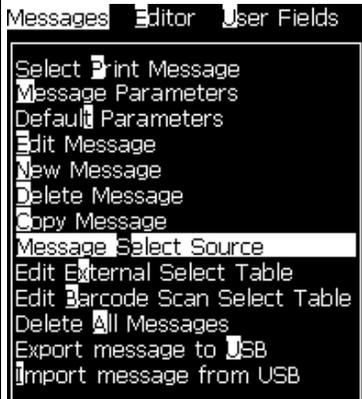
Messages Menu	Commands	Function
	<p>Message Select Source</p>	<p>Opens the <i>Message Select Source</i> dialog box, with options <i>Internal</i>, <i>Barcode Scan</i> and <i>WSI Protocol</i>.</p>  <p>Use the options to configure how the inputs are read (optional for 1610 DH).</p>

Table 5-1: Messages Menu and Commands

Messages Menu	Commands	Function
 <p>Messages Editor User Fields</p> <ul style="list-style-type: none"> Select Print Message Message Parameters Default Parameters Edit Message New Message Delete Message Copy Message Message Select Source Edit External Select Table Edit Barcode Scan Select Table Delete All Messages Export message to USB Import message from USB 	<p>Edit Barcode Scan Select Table</p>	<p>Opens the <i>Barcode Scan Message Select Table</i> dialog box.</p>  <p>Barcode Scan Message Select Table</p> <ul style="list-style-type: none"> 0.< > 1.< > 2.< > 3.< > 4.< > 5.< > 6.< > 7.< > 8.< >

Table 5-1: Messages Menu and Commands (Continued)

Editor

The commands in the *Editor* menu are shown only if the Message Editor is open. If the Message Editor is closed, the only option shown in the *Editor* menu is "Only used when in Editor".

Note: The command *In-line Attributes* is not available in Videojet 1610 DH UI.

Note: All Editor commands are available for level 1 and above users.

Note: For more information on Editor menu refer Videojet 1610 Operator Manual (P/N 462128).

Print

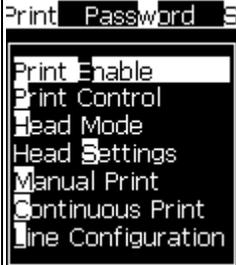
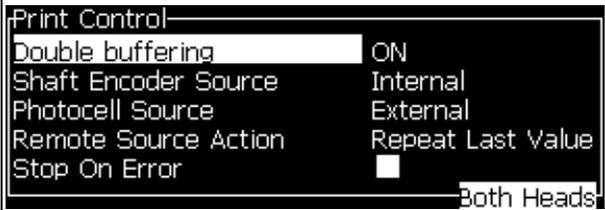
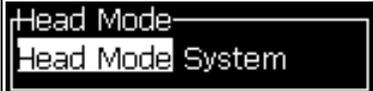
Print Menu	Commands	Function
	Print Enable	<p>Opens the <i>Print Enable</i> dialog box. You can <i>Enable</i> or <i>Disable</i> Head 1 and Head 2.</p> 
	Print Control	<p>Opens the <i>Print Control</i> dialog box.</p> 
	Head Mode	<p>Opens the <i>Head Mode</i> dialog box.</p>  <p>You can toggle the Head Mode between <i>System</i> and <i>Independent</i> mode.</p>
	Head Settings	<p>Opens the <i>Head Settings</i> dialog box.</p>  <p>Note: <i>Head Offset</i> is the distance between the print trigger and printhead in inches.</p>

Table 5-2: Print Menu and Commands

System

For Clean Start Jet, Quick Start Jet, Clean Stop Jet and Quick Stop Jet commands, select *Head 1*, *Head 2* or *Both Heads*.

Note: Select the correct option for *Head 1*, *Head 2* or *Both Heads* using the left and right arrow keys.

For Nozzle Flush, System Flush Purge, Umbilical Purge commands, select either *Head 1* or *Head 2*.

Configure

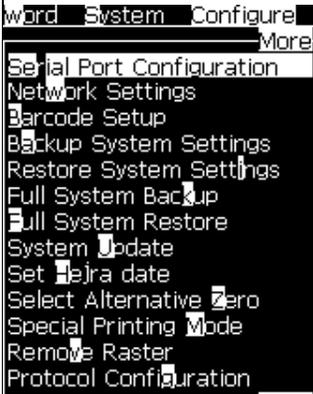
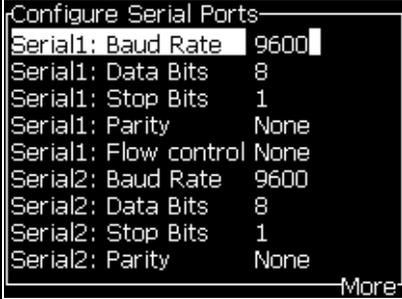
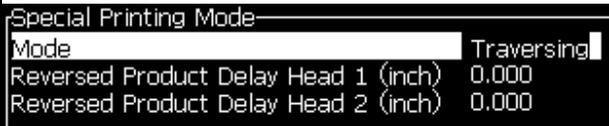
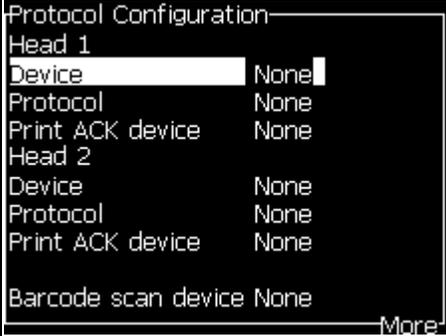
Configure Menu	Commands	Function
	Serial Port Configuration	<p>You can configure the <i>Serial1</i> and <i>Serial2</i> ports.</p> 
	Special Printing Mode	<p>Selects DIN printing and traversing printing.</p>  
	Protocol Configuration	<p>Opens the <i>Protocol Configuration</i> dialog box.</p> 

Table 5-3: Configure Menu and Commands

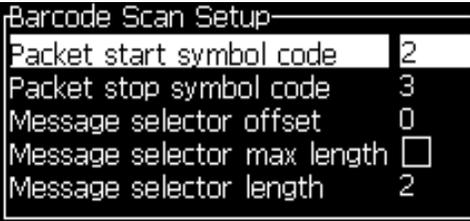
Configure Menu	Commands	Function
 <p>word System Configure More Network Settings Barcode Setup Backup System Settings Restore System Settings Full System Backup Full System Restore System Update Set Date Select Alternative Zero Special Printing Mode Remove Raster Protocol Configuration Barcode Scan Setup</p>	Barcode Scan Setup	<p>Opens the <i>Barcode Scan Setup</i> dialog box.</p>  <p>Barcode Scan Setup Packet start symbol code 2 Packet stop symbol code 3 Message selector offset 0 Message selector max length <input type="checkbox"/> Message selector length 2</p>

Table 5-3: Configure Menu and Commands (Continued)

Manage Messages

Refer to Chapter 5, “User Interface” of Videojet 1610 Operator Manual (P/N 462128) for complete information on the following topics:

- To Create a Message
- To Edit a Message
- To Select the Source for a Message
- To Copy and Paste a Message
- To Enter Multiple Lines in a Message
- To Set the Message and Default Parameters
- To Clear a Message
- To Save a Message
- To Save a Message and Exit
- To Exit without Saving the Message
- To Delete a Message

To Select the Source for a Message

You can set and select the stored messages in the machine by the following options:

- Internal
- Barcode Scan

- WSI Protocol
- 1 Press the *Alt+M* keys. The *Messages* menu appears.
 - 2 Select *Message Select Source*. The *Message Select Source* Menu appears.



Figure 5-2: Message Select Source - Internal Source

- 3 Use the arrow keys to select the required source - *Internal*, *Barcode Scan* or *WSI Protocol*. Refer to the *WSI Communications Protocol (P/N 462115)* for more information on WSI protocols.
- 4 Select the *Barcode Scan* option.
- 5 Select the data source - *Barcode scan queue* or *Last received barcode scan* for barcode scan source.



Figure 5-3: Message Select Source - Barcode Scan

- 6 Press the Enter key to set the source and return to the Message Editor screen.
- 7 Select the *Messages* menu again. Select the *Edit Barcode Scan Select Table*.



Figure 5-4: Edit Barcode Scan Select Table

- 8 Enter the names into the table locations for the parallel bit values from the barcode scan code table.
- 9 Press the *F2* key to select the message names from a list of those available.

- 10 When you assign all the messages that must be available for the barcode scan, press the *Enter* key to return to the *Message Editor* screen. Else, press the *Esc* key to return to the *Message Editor* screen without any changes.

Manage User Fields

There are many pre-defined user fields in the software.

- Hour of the week - Number of hours from the start of the configured rollover day for the week. Use this option to print the current hour from the configured start of the week. The range is between 0 and 168.

For information on other pre-defined user fields, refer Videojet 1610 Operator Manual (P/N 462128).

Refer to Chapter 5, "User Interface" of Videojet 1610 Operator Manual (P/N 462128) for complete information on the following topics:

- To Insert a User Field
- To Insert a Pre-defined User Field
- To Edit a User Field
- To Delete a User Field
- To Create a Custom User Field
- To Reset a Message Counter
- To Set Shifts
- To Set the Timer
- To Set the Encoded Hour
- To Set the Encoded Day of the Week

To Create a Custom User Field

To Set Text Attributes

List Prompt

User can select their contents from a list when the message is selected to print. When the field is created, the user can define the prompt message and the list of values that will be available on the input.

To Define a List Prompt

When a message that contains a list prompt is loaded, the operator is asked to provide the contents for the field.

Do the following tasks to add list prompt attribute to the User fields:

- 1 Press the *Alt+U* keys. The *User Fields* menu appears.

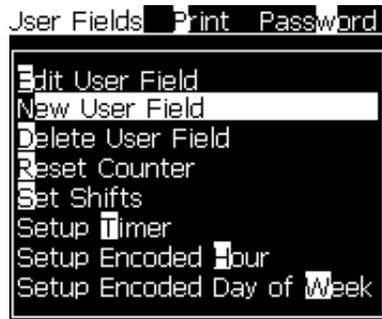


Figure 5-5: User Fields Menu

- 2 Select *New User Field* and press the *Enter* key. The *New User Field* dialog box appears.



Figure 5-6: New User Field Dialog Box

- 3 Enter a name for the *User Field*.
- 4 Highlight the *Description* option using the *Down* arrow key.
- 5 Select the *Text* option using the *Left* and *Right* arrow keys.
- 6 Press the *Enter* key to open the configuration dialog box for text user fields (see Figure 5-7).



Figure 5-7: Attribute - List Prompt

- 7 Enter a default value for the list prompt, which is related to the field with the label *Text*. This text is displayed in the list prompt until the operator deletes the text and enters new information.
- 8 Highlight *Attribute* option using the *Down* arrow key.
- 9 Select the *List Prompt* option using the *Left* and *Right* arrow keys.

- 10 Press the *Enter* key to open the configuration dialog box for list prompt (see Figure 5-8).



Figure 5-8: Configure List Prompt

- 11 Enter the value for *Number of options* field.
- 12 Highlight *Default option type* option using the *Down* arrow key.
- 13 Use the *Left* arrow key and *Right* arrow key to select one of the following types of default options:
 - Specified line
 - Blank line
 - Last line used
- 14 Press the *Enter* key to open the *Option list* dialog box.



Figure 5-9: Option List Dialog

- 15 Enter the list of options and press *Enter* to save the created list prompt and exit the option list dialog box.

Refer to “To Modify Text Attributes” in Chapter 5, “User Interface” of Videojet 1610 Operator Manual (P/N 462128) for more information.

Manage Text

Refer to Chapter 5, “User Interface” of Videojet 1610 Operator Manual (P/N 462128) for complete information on the following topics:

- To Change Font Case
- To Set Font Height
- To Select Content
- To Copy and Paste Text
- To Modify Text Attributes

- To Insert Foreign Language Characters

To Modify Text Attributes

The Modify Attributes option allows the operator to change the attributes of the selected content displayed in the editor screen.

Refer to Chapter 5, “User Interface” of Videojet 1610 Operator Manual (P/N 462128) for more information on this topic.

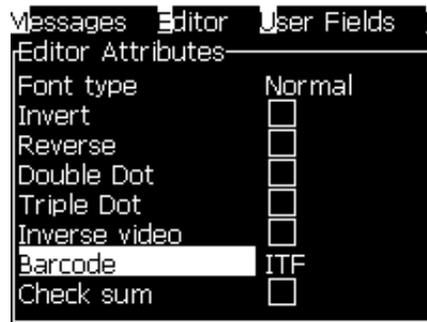


Figure 5-10: Editor Attributes

Introduction

The maintenance of the printer includes the procedures that an operator can perform. This chapter describes the maintenance tasks that the operators of the printer are allowed to perform. The other maintenance tasks that only the trained service technicians and personnel must perform are described in the Service Manual.



Warning

PERSONAL INJURY. It is possible that in a fault condition the heater can reach 70° C. Do not touch the plate on which heater is installed. The failure to follow this warning can cause the personal injury.

Refer to the Chapter 6, “Maintenance” of the Videojet 1610 Operator Manual (P/N 462128) for complete information on following maintenance procedures.

- Maintenance Schedule
- Replace Smart Cartridges
- Inspect the Printhead
- Clean the Printhead
- Clean the Printer Cabinet

Introduction

This chapter contains the troubleshooting and fault diagnosis information for the everyday users of the printer. The service manual has more information on troubleshooting for the service technician and trained personnel.



Warning

LETHAL VOLTAGES. Lethal voltages are present within this equipment when the equipment is connected to the main electrical supply. Only trained and authorized personnel must do the maintenance work. Observe all statutory electrical safety codes and practices. Unless it is necessary to run the printer, disconnect the printer from the main electrical supply before you remove the covers or do any service or repair activity. The failure to follow this warning can cause death or personal injury.



Warning

PERSONAL INJURY. It is possible that in a fault condition the heater can reach 70° C. Do not touch the plate on which heater is installed. The failure to follow this warning can cause the personal injury.

Refer to Chapter 7, 'Troubleshooting' of the Videojet 1610 Operator Manual (P/N 462128) for complete information on following troubleshooting procedures.

- The Printer Does Not Start

Note: If the printer does not start with Clean Start, perform a Quick Start.

- Incorrect Print Position
- Incorrect Print Size
- Print Not Complete

- Poor Print Quality
- Printer Status Icons

Note: Head specific warnings will be prefixed with the head number.

For example  : indicates that the temperature of Printhead 1 is too low.

Note: In case, a fault occurs in one of the printheads, then this fault can be reset while the other printhead is still in operation.

Printhead Problem

Problem	Action
Printhead does not respond as expected	Make sure correct printhead is selected.

Table 7-1: Problem and Action

Specifications

A

Electrical Specifications

The electrical specifications of the printer are shown in Table A-1.

Voltage	100 V AC to 240 V AC
Frequency	50 Hz to 60 Hz
Power Consumption	120 watts Maximum

Table A-1: Electrical Specifications

Weight

The dry weight specification of the printer is shown in Table A-2.

Dry Weight	22 kg
------------	-------

Table A-2: Weight Specifications

Dimensions

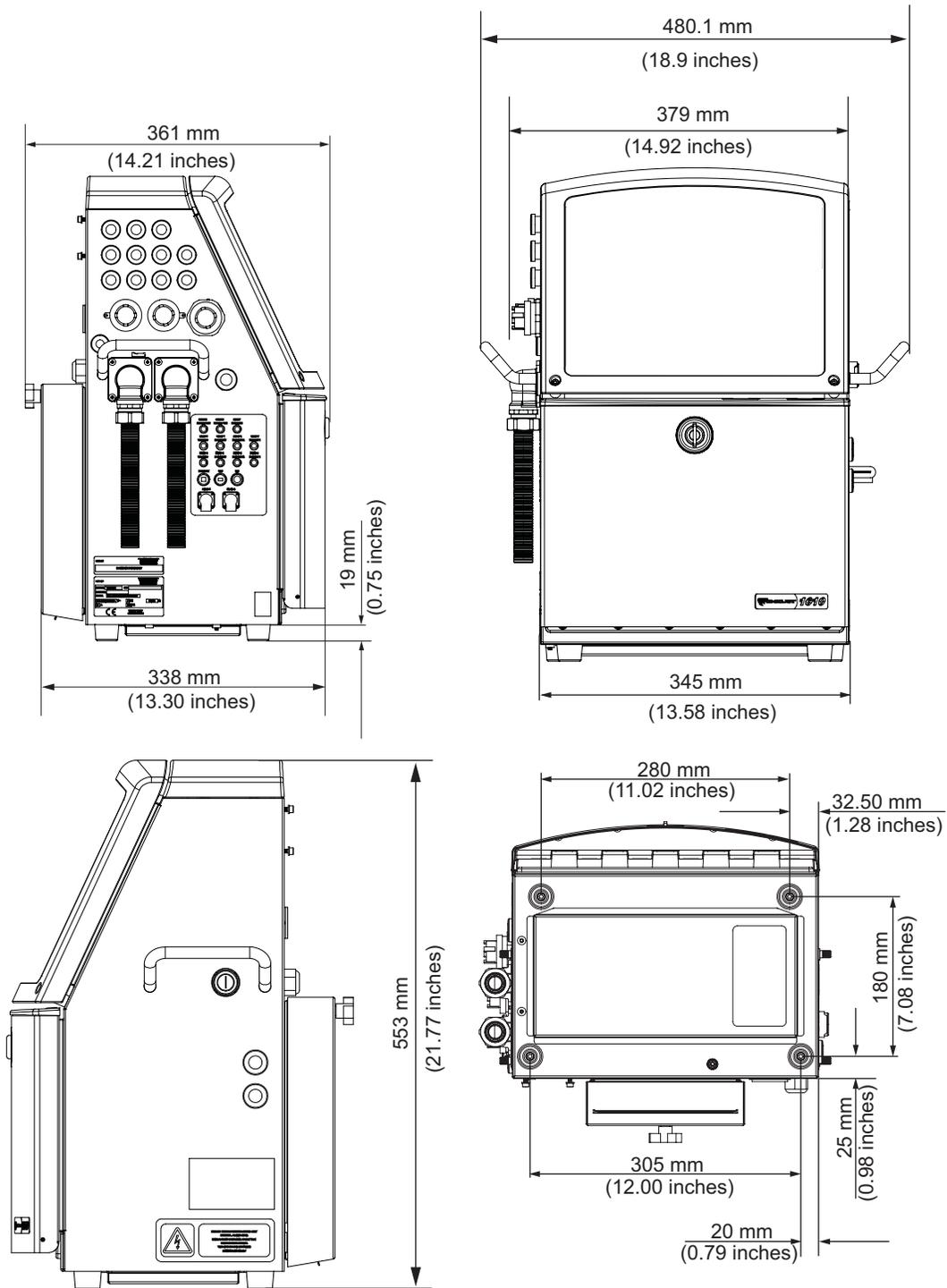
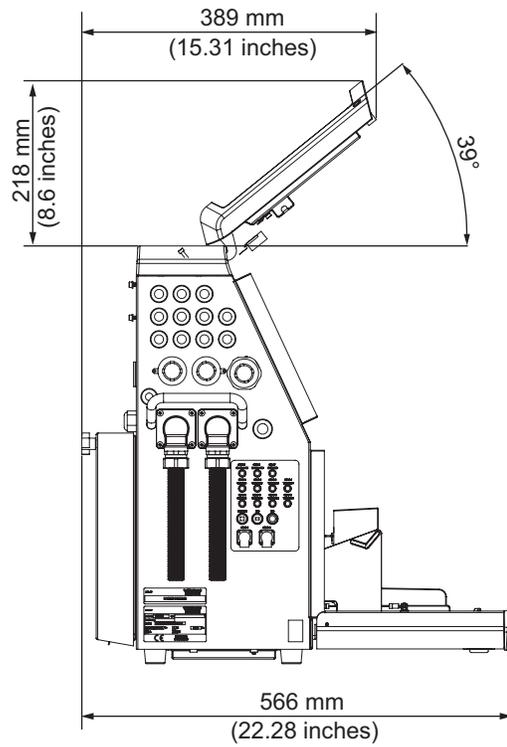
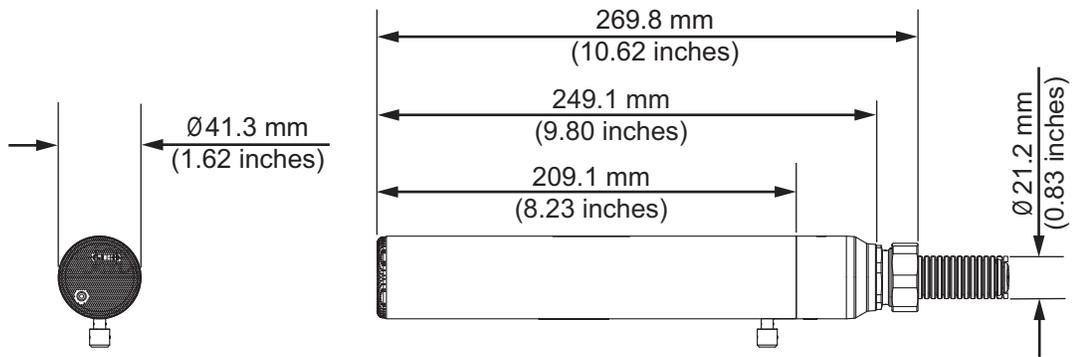


Figure A-1. Printer Dimensions



Both Doors Open



Printhead

Figure A-2. Printer Dimension (continued)

Cabinet	Width	345 mm
	Height	533 mm
	Depth	338 mm

Table A-3: Printer Dimensions

Printhead	Diameter	41.3 mm
	Diameter of the Nozzle Orifice	70 and 60 Microns
Umbilical Length*	Standard	3 Meter
	Option	6 Meter
Cabinet Variation	Standard	IP 65

Table A-3: Printer Dimensions

Note: Both the printheads must use the same umbilical length (3 m or 6 m).

Note: The two printheads may operate with head elevations at a maximum of two meters offset between heads.

Environmental Specifications

The environmental specifications of the printer are shown in Table A-4.

Operating temperature	5 °C to 45 °C (41 °F to 113 °F)
Rate of change of ambient temperature	10 °C (18 ° F) per hour maximum
Relative humidity	0% to 90 % non-condensing
Storage temperature	5 °C to 50 °C (41°F to 122 °F) in original packaging
Industrial-protection rating	IP65 is standard

Table A-4: Environmental Specifications

Print Height

The minimum and maximum height of the message for the print matrix is shown in Table A-5.

2 mm	Minimum
12 mm	Maximum

Table A-5: Print Height

Ink and Make-up Fluid Capacity

Ink Cartridge	750 millimeters
Make-up Fluid Cartridge	750 millimeters

Table A-6: Ink and Make-up Fluid Capacity

Throw Distance

The optimum throw distance is 12 mm (range of 5 mm to 15 mm).

Communication Channels

Port	Specification	Connector
Ethernet	10/100 MBPS (with Interdependently addressed print-heads)	RJ 45
USB (1)	1.1 (12 MBPS) Host Mode only	Type A Socket (External)
USB (2)	1.1 (12 MBPS) Host and Device mode	Type A Socket (Internal)
Comms 1 RS232/485	75-230K Baud with Hardware Flow Control (RS232 only).	8 Pin Din Connector
Comms 2 RS232/485	75-230K Baud with Hardware Flow Control (RS232 Only)	8 Pin Din Connector

Table A-7: Communication Channels

Status Outputs

Port	Specification	Connector
2 X Beacon	24V, 1A supply plus four pull down channels (Red, Amber, Green and Klaxon)	6 way Din

Table A-8: Status Outputs

Port	Specification	Connector
Dual Select Relays	24V, 1A rated Volt free Relay 1 = follows green 24V, 1A rated Volt free Relay 2 = follows amber	7 way Din

Table A-8: Status Outputs (Continued)

Print Control Inputs

System Mode

Port	Specification
Photocell x 2	15 V, 1A fused supply 100 Hz, NPN/PNP Opto Isolated Input
Shaft encoder x 1	15 V, 1A fused supply 2 x 100 KHz direct inputs (supporting single phase or quadrature encoders)
Barcode scanner message select	Uses RS232 or USB input

Table A-9: System Mode

Independent Mode

Port	Specification
Photocell x 4	15 V, 1A fused supply 100 Hz, NPN/PNP Opto Isolated Input
Shaft encoder x 2	15 V, 1A fused supply 2 x 100 KHz direct inputs (supporting single phase or quadrature encoders)
Barcode scanner message select	Uses RS232 or USB input

Table A-10: Independent Mode

Note: Photocells 1 and 2 are specific for printhead 1 and S-Mode. Photocell 3 and 4 are for printhead 2 only.

Note: There will be an encoder input for each printhead for independent encoding.

Font Specifications and Line Speeds

The fonts available for the printer are listed in Table A-11.

Line Mode	Height	Width	Cal. Mid Speeds	
			ft/min	m/min
1	5	5	914	278.6
1	7	4	960	292.6
1	7	5	800	243.8
1	9	7	533*	162.5
1	12	9	256	78.03
1	16	10	194	59.13
1	24	16	95	28.96
1	34	25	55	16.15
2	5	5	376*	114.6
2	7	4	480*	146.30
2	7	5	400*	121.92
2	9	7	229*	69.79
2	12	9	85	25.91
2	16	10	55	16.76
3	5	5	118	35.97
3	7	4	265*	80.77
3	7	5	221*	67.36
3	9	7	121*	36.88
4	5	5	85	25.91
4	7	4	67	20.42
4	7	5	55	16.76
5	5	5	55	16.76

Table A-11: Fonts

**high speed non-linear rasters*

Note: The line speeds indicate the speed per printhead.

S-Mode and I-Mode Functions and Differences

Function	S-Mode	I-Mode
EHT On/Off	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
EHT Setting	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Product Counter	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Run Hours	Common to both printheads	Common to both printheads
Print Trigger 1 - Head 1	Controls both printheads	Controls printhead 1
Print Trigger 2 - Head 1	Controls both printheads traverse	Controls printhead 1 traverse
Print Trigger 1 - Head 2	Not used	Controls printhead 2
Print Trigger 2 - Head 2	Not used	Controls printhead 2 Traverse
Modulation	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Viscosity Calibration	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Gutter Pump Speed	Common to both printheads	Common to both printheads
Printhead Elevation	Separate printhead 1 and printhead 2 control - Limit to 2m between heads	Separate printhead1 and printhead 2 control - Limit to 2m between heads
Smart Chip Data	Common to both printheads	Common to both printheads
Clear Alarms and Warnings	Common to both printheads	Common to both printheads
Head 1 Encoder	Controls both printheads - if external shaft encoder selected	Controls printhead 1 - if external shaft encoder selected
Head 2 Encoder	Not Used	Controls printhead 2 - if external shaft encoder selected
Nozzle Flush	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Print Enable	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Password Control	Common to both printheads	Common to both printheads

Table A-12: S-Mode and I-Mode Functions and Differences

Function	S-Mode	I-Mode
Line Configuration	Common to both printheads (pulses/internal line speed/product size/divider strokes/units)	Separate printhead 1 and printhead 2 control
Continuous Print	Common to both printheads	Separate printhead 1 and printhead 2 control
Head Settings	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Messages	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
User Fields	Common to both printheads	Common to both printheads
Umbilical Purge	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Ink Core Operations	Common to both heads	Common to both heads
Valve Test	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Network Settings	Common to both printheads	Common to both printheads
RS 232/485 Settings	Common to both printheads	Common to both printheads
Backup/Restore	Common to both printheads	Common to both printheads
System Flush Purge	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Starting/Stopping Jets	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control
Message selection method (internally barcodes)	Separate printhead 1 and printhead 2 control	Separate printhead 1 and printhead 2 control

Table A-12: S-Mode and I-Mode Functions and Differences (Continued)

Optional Accessories

Refer to Appendix A, 'Specifications' of the Videojet 1610 Operator Manual (P/N 462128) for complete information on various optional accessories.

Printhead Bracket

The existing printhead stand is used with a new bracket to mount both the printheads.

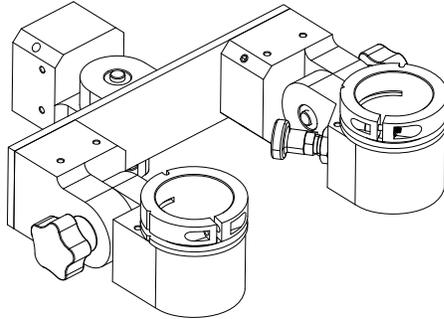


Figure A-3. Dual Head Bracket