USER GUIDE

DTG M SERIES PRINTER

REV. PR	*DTG-M-T-1.0 DRAFT ONLY - NOT RELEASED*

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I. Important Notice

1. For Users in Europe

IMPORTANT:

This is a Class A product approved for industrial environments. In some environments this product may cause radio interference in which case you may be required to take measures to re-locate this product.

2. For Users in the United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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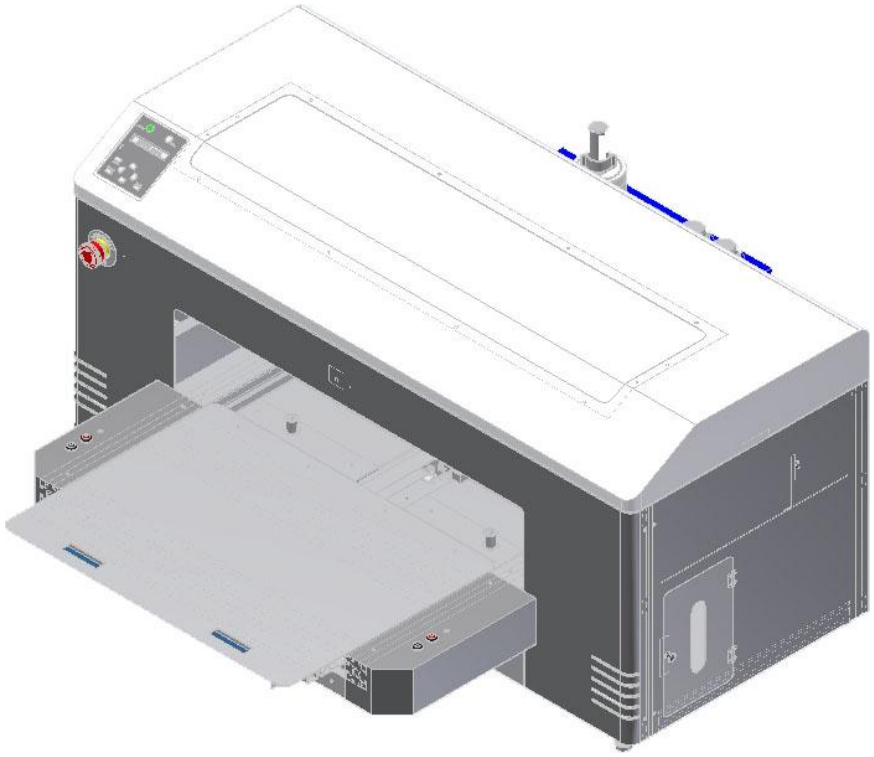

III. About this Manual

A. Purpose and Target Readers

This manual explains the preparations and procedures for operating the DTG M series printer.

This is a common User Guide for the DTG M series of printers. Unless specifically mentioned to the contrary, the descriptions in this manual are common for all DTG M series models.

This manual is designed to assist the end user in the use, maintenance and general troubleshooting of the DTG M series printers. Before using the DTG M series printer you are required to read and fully understand the contents and directions in this manual.

B. Manual Configuration

Section	*Contents*
1 Safety Instructions	Explains types of warnings, cautions and warnings labeled on the printer
2 Product Overview	Explains the features, part names, and functions of the printer.
3 Specifications	Explains the specifications of the printer.
4 Parts Replacement	Explains the procedures of replacement and removal of the service parts
5 Self-Diagnostic Mode	Explains the self-diagnostic functions of the printer.
6 Maintenance Mode2	Explains the maintenance mode2 of the printer.
7 Adjustment	Explains the adjusting procedures of the printer parts.
8 Maintenance	Explains daily maintenance of the printer.
9 Troubleshooting	Explains troubles that may occur when using the printer and how to
10 Appendix	Explains the maintenance information and the exploded views for this

C. Manual Notation

The following symbols are used in this manual for easier understanding of the information.

Symbol	*Meaning*
WARNING	Must be followed carefully to avoid death or serious bodily injury or catastrophic damage to your equipment.
CAUTION	Must be observed to avoid slight or moderate bodily injury or damage to your equipment.
NOTE	Contains important information and useful tips on the operation of the product
TIP	Indicates useful tips for operating or understanding the equipment or getting the best performance from your equipment.
☞	Indicates reference pages in this manual

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5. General Care & Maintenance of your DTG M2 88

1.Safety Instructions

1.1 Introduction

This chapter explains the meaning of safety terms for personnel who install, operate, or maintain this equipment, important safety instructions, and the warning labels attached to the equipment.

WARNING

Make sure to follow all instructions and warnings on this manual when installing, operating, or maintaining the equipment.

1.2 Warnings, Cautions and Notes

Safety terms in this manual and the contents of warning labels attached to the printer are categorized into the following three types depending on the degree of risk (or the scale of accident).

Read the following explanations carefully, and follow the instructions in this manual.

Safety Terms	*Details*
WARNING	Must be followed carefully to avoid death or serious bodily injury
CAUTION	Must be observed to avoid slight or moderate bodily injury or damage to whole or part of the product
NOTE	Contains important information and useful tips on the operation of the product

TABLE 1-1 SAFETY TERMS

1.3 Important Safety Instructions

General safety instructions that must be observed to use the equipment safely are explained below.

WARNING

1. Do not place the printer in the following areas. Doing so may result in the printer tipping or falling over and causing serious injury.
   - Unstable or loose surfaces
   - Angled surfaces
   - Areas subject to vibration by other equipment
2. Do not stand on or place heavy objects on your printer. Doing so may result in the printer tipping or falling over and causing injury.
3. Do not cover the ventilation hole of your printer with cloth, such as a blanket or table cloth. Doing so could obstruct ventilation and cause fire.
4. Do not place the printer in humid and dusty areas. Doing so may result in electrical shock or fire.
5. Make sure to use the power cable packed with the printer you purchased. Not doing so may result in electrical shock or fire.
6. Do not use the power cable if it is damaged in any way. Doing so may result in electrical shock or fire.
7. Do not insert or drop metal or objects which are easily combustible through the openings such as the ventilation hole of your printer. Doing so may result in electrical shock or fire.
8. Do not operate the printer if it has been contaminated by foreign substances or liquid spills as doing so may result in electrical shock or fire. Immediately turn off the power switch, disconnect the power plug from the electric socket, and contact your authorized DTG Dealer.
9. Make sure to use only the specified power supply (AC 100 V - 120 V or AC 220 V - 240 V). If the power supply other than the specified voltage is used, it could cause an electric shock and fire.
10. Take power for the plotter directly from the power socket (AC 100 V - 120 V or AC 220 V - 240 V). Do not use complex multiple plugs on the same socket. This could generate heat and might cause fire.
11. Make sure that the following is performed before parts replacement.
    - Turn off the power of the printer.
    - Remove the power cable from the power outlet. Not doing so may cause electric shock or damage to the electric circuit.
    - Unplug the cables connected to the printer. Failure to do so could result in damage to the printer.

CAUTION

1. Pay attention to the following when handling the power cable:
   - Do not do anything forcefully (e.g. pull, bend, twist) on the power cable
   - Do not place heavy objects on the power cable
   - Do not route the power cable near heat sources

2. Pay attention to the following points while handling the power supply plug. Not going so may result in electrical shock or fire:
   - Make sure that the power cable / plug is not contaminated by no foreign substances such as dust etc.
   - Make sure that the power plug is correctly connected to the power socket.
3. Pay attention when handling inks so that ink does not get into the eyes or spill on your skin. If the ink does get into eyes or onto skin, immediately wash the affected area with water. The inks may cause mild skin irritation and/or inflammation of the eyes. Consult with medical personnel in the case of any severe reaction.
4. Be careful to ensure that fingers are not caught in the opening when lifting and closing the top cover of the printer.
5. Do not use strong solvents such as thinners, benzene or alcohol on the printer. These products may damage the paint on the printer.
6. Take care that moisture does not enter the printer. There is a risk of a short circuit of the electrical circuit(s) within the printer if this occurs.
7. Ensure that the printer is always kept in a horizontal position, even whilst it is being lifted or moved.
8. Do not leave the printer on a slanted surface. Do not leave the printer upside down. Doing so may cause ink leakage and / or trouble that cannot be restored, as the printer is originally assembled in the factory with a high accuracy of 1/100 mm.
9. Ensure all packing materials are removed from the printer before lifting from it's crate. If the printer is lifted with materials attached, it may slip from the hands and be damaged.
10. Assembling and disassembling of the printer are possible only for the parts that disassembling procedures are shown in this manual, and should be undertaken only by DTG authorized and trained professionals. Do not disassemble any frame parts or parts that disassembling procedures are not shown in this manual. Doing so may cause trouble that cannot be restored, as the printer is originally assembled in the factory with a high accuracy of 1/100 mm.
11. Do not touch the elements on the circuit board with bare hands. Doing so may cause static electricity and cause catastrophic invisible damage.
12. Do not press the transparent film on the damper assembly with your hands. Doing so may discharge the ink filled inside the damper assembly or damage the pressure valve.
13. Be careful not to damage the transparent film on the damper assembly.
14. Do not touch the nozzle plate of the print head, keep free from dust.
15. There is ink in the tubes throughout the printer. Be careful that the ink is not spilled from any tube outlet onto the printer or items close to the printer.

16. If you need to operate the printer with the cover removed for maintenance or repair, be careful not to get injured by any moving parts.
17. Never lubricate the printer mechanism with anything other than that designated by Impression Technology. Doing so may damage the parts or shorten the lifetime.
18. If the power board assembly needs to be removed, remove the power cable and wait for 5 minutes or more before taking it out; this will discharge the residual electrical charge of the electrolytic capacitor. Touching the board before the capacitor discharges may cause electric shock or death.
19. When connecting or removing an FFC type cable on a main board assembly connector, make sure to connect or remove the cable perpendicular to the connector. Connecting or removing at a slant may damage, break or short-circuit the inner terminal of the connector and may damage the components on the board.
20. When connecting or removing an FFC type cable on the CR board assembly connector, make sure to connect or remove the cable perpendicular to the connector. Connecting or removing at a slant angle may damage, break or short-circuit the inner terminal of the connector. That may damage the components on the board.
21. Make sure there is sufficient space around the printer when performing maintenance work.
22. Maintenance must be done by more than two person for the following work.
    - When disassembling or reassembling the product and the optional stand
    - When packing the printer for transportation

1.4 Warning Label types and meanings

The handling, attachment locations, and types of warning labels are explained below.

Warning labels are attached to areas where care should be taken. Read and understand the positions and contents thoroughly before maintenance operation.

1.4.1 Handling the Warning Labels

Make sure to note the following when handling the warning labels.

NOTE

1. Make sure that all warning labels can be recognized. If text or illustrations cannot be seen clearly, clean or replace the label.
2. When cleaning warning labels, use a cloth with water or neutral detergent. Do not use any solvent or gasoline products.
3. If a warning label is damaged, lost, or cannot be recognized, replace the label.

A

B

C

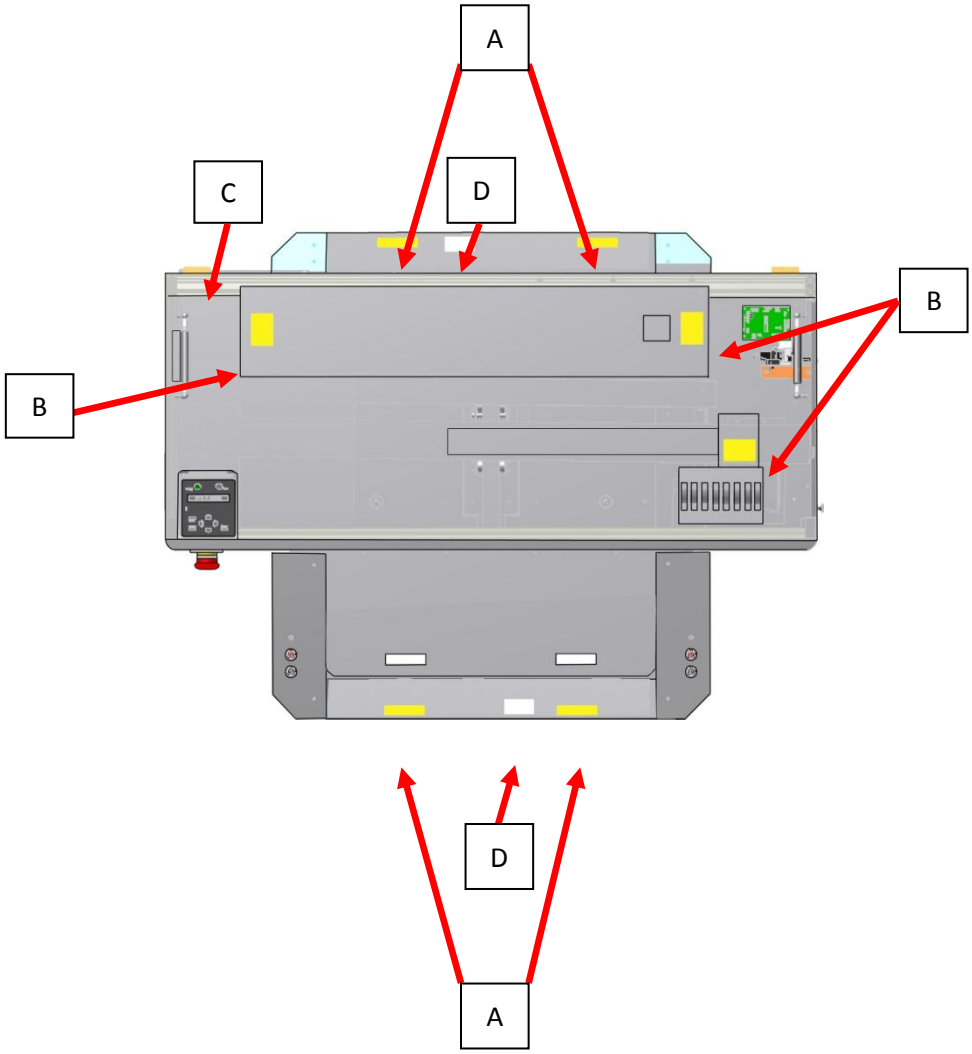
D

Ref	*Warning Label Type*
A	Using this area as a lift point will cause damage to the printer.
B	Do not touch anything in this area unless instructed.
C	Dangerous voltages present in this area.
D	Fingers may be trapped and ripped off in this area.

TABLE 1-2 WARNING LABEL TYPE

1.4.2 Locations of Warning Labels

The locations of warning labels are shown below.



Ref	*Warning Label Type*
A	Using this area as a lift point will cause damage to the printer.
B	Do not touch anything in this area unless instructed.
C	Dangerous voltages present in this area.
D	Fingers may be trapped and ripped off in this area.

2.Product Overview

2.1 Introduction

This chapter explains the features, part names, and functions of the printer.

2.2 Features

The features of the printer are explained below.

2.2.1 High Resolution Image Quality

This model uses the drop on-demand piezo head with a high performance coated nozzle plate.

The ability to eject >40pl droplet size enables excellent white ink delivery.

2.2.2 Ink Supply System

This model uses a microprocessor controlled pressurised color ink supply system and a patented White Ink Management System (WIMS) utilising high performance brushless motors designed to provide trouble free, accurate white ink delivery at all times.

2.2.3 Operation Efficiency Improvement

Loading media onto the media platens is done away from the printer and then slipped into the ACCULOK platen locating and holding system.

2.2.4 Operability Improvement

The simple and intuitive GO/NO GO system uses two high brightness LED's to indicate to the user whether or not the printer is ready to receive a print job.

Sending a print when either LED is not green will result in a failed print job.

2.3 Part Names and Functions

Part names and functions are explained in this section.

For the directions described in this document, refer to the following orientation figure:

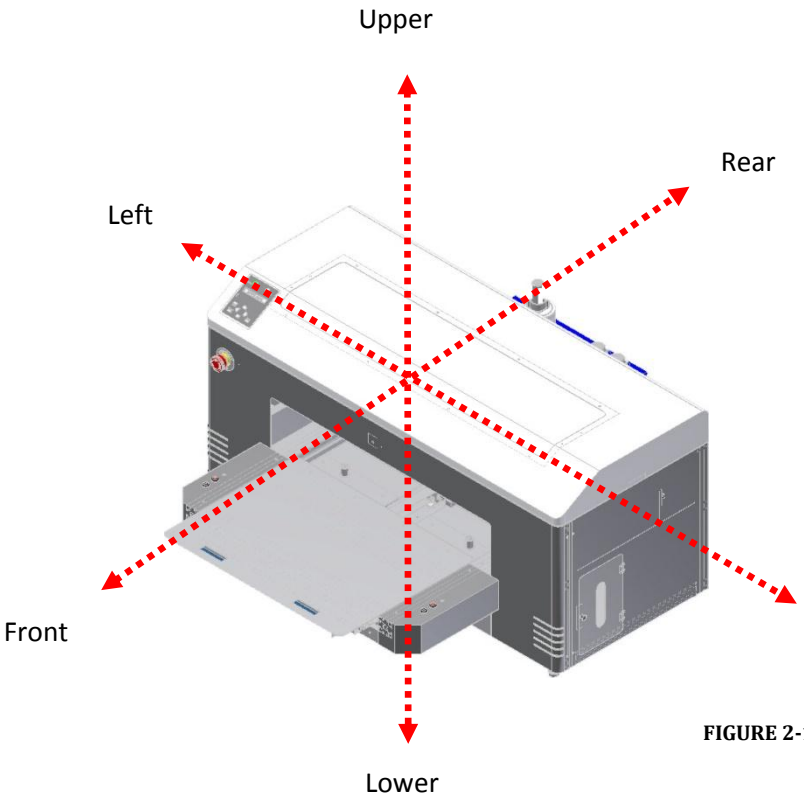


FIGURE 2-1 PRINTER ORIENTATION

2.3.1 Front Section

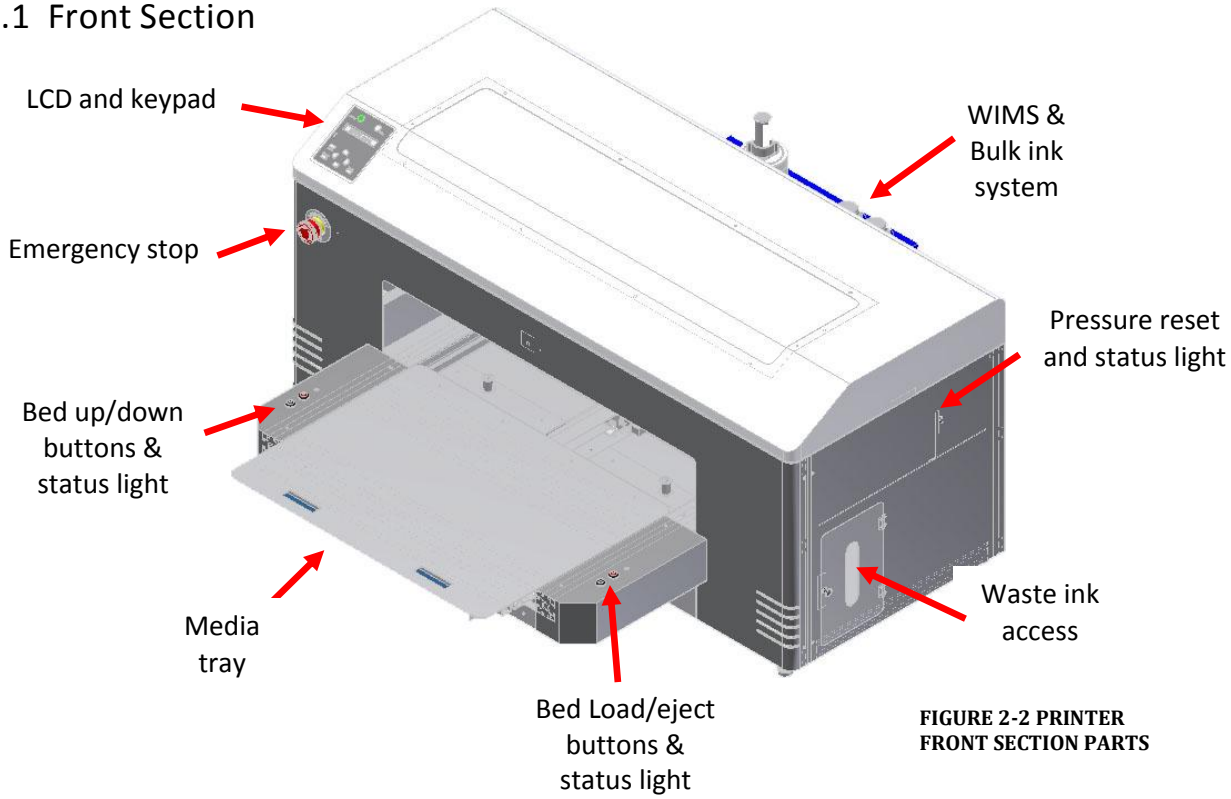
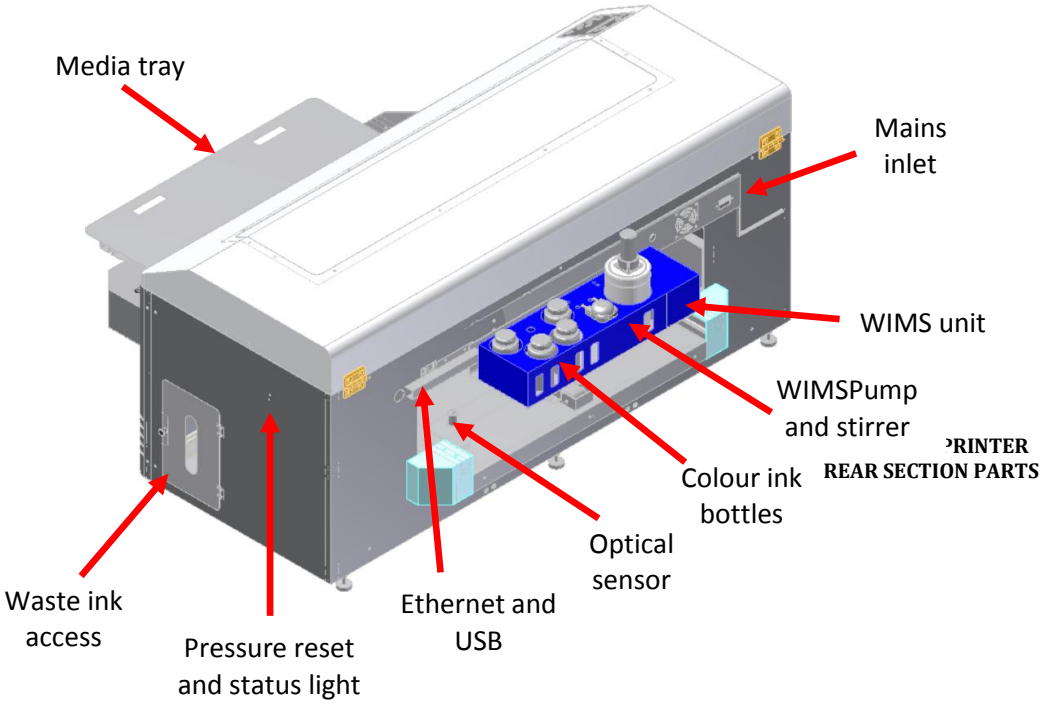


FIGURE 2-2 PRINTER FRONT SECTION PARTS

Name	*Function*
Emergency stop	This button removes mains power from the printer in an emergency.
Bed UP button	This button causes the motorised bed to move upwards and decrease the gap between the print head and media.
Bed DOWN button	This button causes the motorised bed to move downwards and increase the gap between the print head and media.
Bed STATUS light	This solid state lamp indicates the status of the bed height and it's relation to the head safety beam. GREEN indicates that the media is at, or lower than, the optimum print height. RED indicates that the media is at, or higher than, the recommended safe print height. AMBER indicates that the media height/head protection system has been disabled and only the bed down button can be used. This mode is accessed by depressing the bed UP button and the bed DOWN button at the same time
Bed LOAD button	This button causes the printer to move the bed into the start of print position in which the top most area of the bed will be aligned with the top of the selected print position.
Bed EJECT button	This button causes the printer to move the bed into the end of print position in which the bottom most area of the bed will be situated in the entry point of the printer.
Bed STATUS light	GREEN indicates that the bed is loaded in to the printer and the printer is ready to print. RED indicates that the bed is NOT loaded in to the printer and the printer will not be able to print correctly, an error will occur if a print is sent to the printer when the bed status light is red. AMBER indicates either that the printer is still powering up or that the BOSS board is in diagnostic mode. This mode is accessed by holding down both bed EJECT and bed LOAD buttons at turn on. Diagnostic mode should only be accessed under the direct instruction of an Impression Technology authorized DTG technician.
Pressure Reset Button & Status Light	The CMYK pressure system comprises a pressure control board, DC motor driven diaphragm pump and pressure limit switch. There is also a reset switch, warning beeper and a status indicator light. The system will pump for a limited time to build the correct CMYK ink pressure level, if this is not achieved the indicator lamp will flash red, the beeper will sound and the pump will stop. This is to alert the user to a pressure loss. This can be reset by briefly pressing the reset switch which will cause the pump to start again and the light will go yellow. When the correct pressure is reached and all is well the indicator lamp will pulse green.

TABLE 2-1 PRINTER FRONT SECTION PART FUNCTION

2.3.2 Rear Section



PRINTER REAR SECTION PARTS

Name	*Function*
AC mains power inlet	For inserting the mains power cable plug.
Network interface connector	Connector to connect a network interface cable.
USB cable connector	Connector to connect a USB cable.

TABLE 2-2 PRINTER REAR SECTION PARTS FUNCTION

2.3.3 WIMS

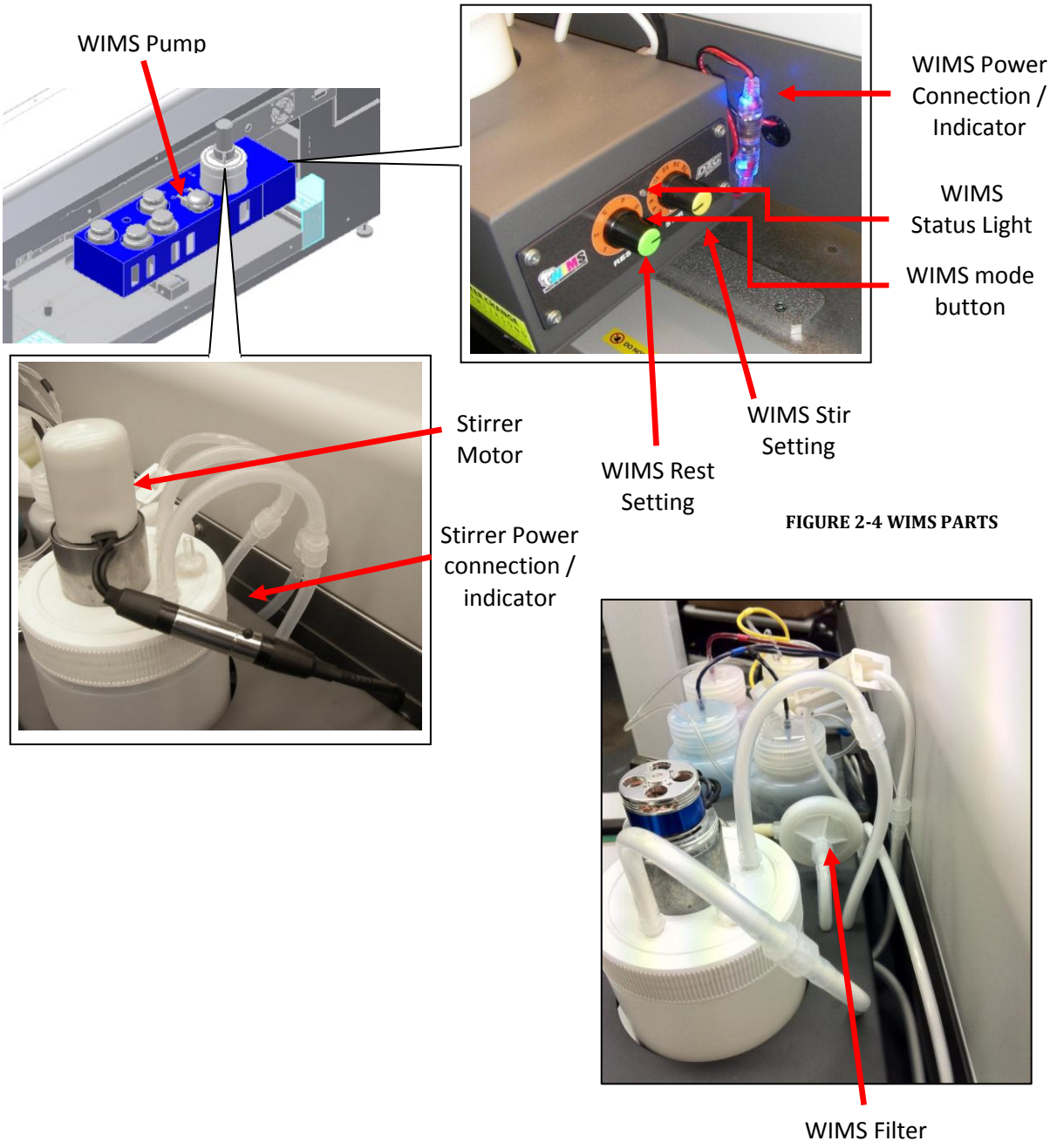


FIGURE 2-4 WIMS PARTS

Name	*Function*
WIMS stirrer power	This indicator is BLUE during standby and RED when the printer is active. This indicator is an integral part of the WIMS power plug.
WIMS stirrer	This assembly stirs the white ink by rotating the stirrer paddle clockwise for approximately 10 seconds and then anti-clockwise for approximately 10 seconds. This is repeated while the unit is active
WIMS pump	This assembly circulates the white ink by peristaltic action to prevent the heavy white pigment from settling in the pipes and bulk container.
WIMS Mode button	This button has two functions. In normal operating mode it will over-ride all settings and force the pump and stirrer to operate continuously. This mode is entered into, and cancelled, by pressing and holding the button for more than three seconds. Diagnostic mode is entered by pressing the button whilst power is being applied to the WIMS.
WIMS status light	GREEN indicates that WIMS has operated for a total of less than 1500 hours. AMBER indicates that WIMS has operated for more than 1500 but less than 1700 hours RED indicates that WIMS has operated for more than 1900 hours and that the peristaltic pump tube should be replaced as soon as possible.
WIMS rest setting	This selects the length of time in segments of one hour for which the WIMS will be at rest between stirring and circulating the ink.
WIMS stir setting	This selects the length of time in two minute segments for which the WIMS will be actively stirring and circulating the ink.
WIMS Filter	The WIMS filter is a 20µm in-line filter capsule and is used as a protection measure for the print head and dampers. Particles or other contaminants which may be present in or ingress into the white ink should be trapped by the WIMS filter and therefore not progress through to the dampers and print head. The WIMS filter should be replaced at least monthly, and more frequently during high volume consumption of white ink.

TABLE 2-3 WIMS PARTS FUNCTION

2.3.4 Operation Panel

The operation panel (LCD & Keypad) is used to set operational conditions, display the status of the printer, and set other functions. The names and functions of the operation keys and status lamps are explained below.

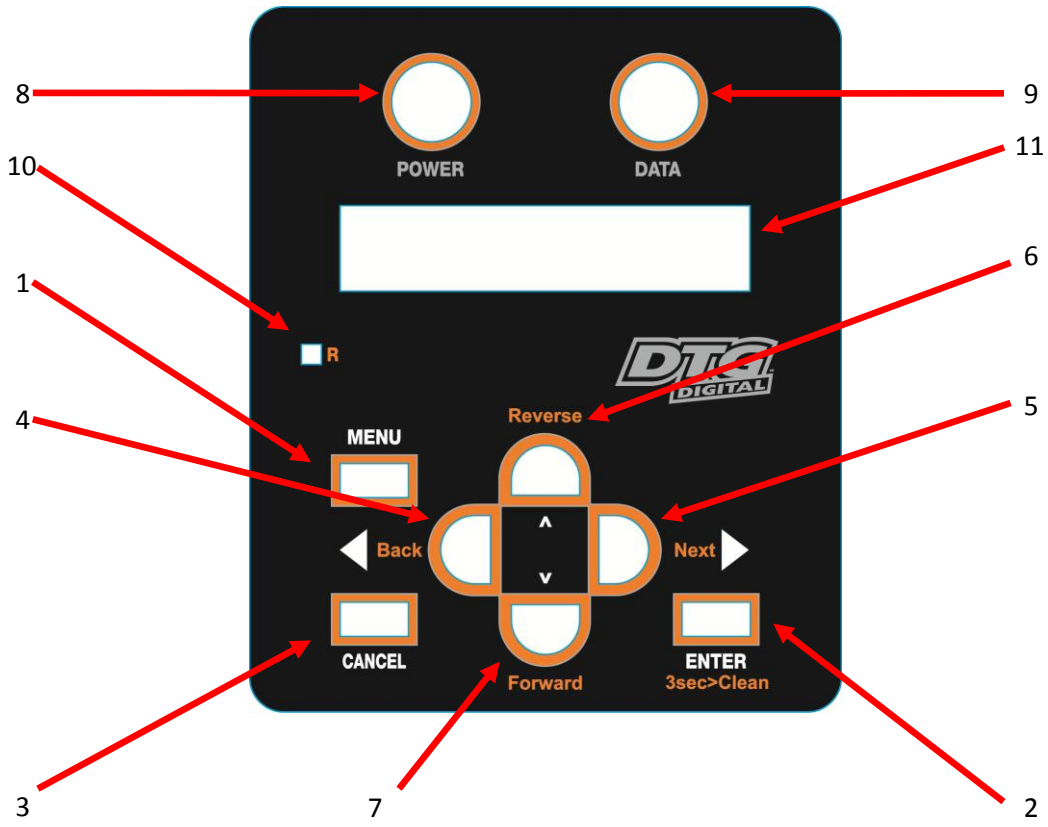


FIGURE 2-5 OPERATION PANEL

2.3.4.1 Operation Keys

NOTE

Some keys have multiple functions and names depending on the printer status (normal or setup menu display). See *2.4 "Printer Status" p.19* for more details.

No.	*Name*	*Normal Operation Function*	*Setup Menu Display Function*
1	[Menu] key	Changes the LCD monitor display to setup menu status.	Changes the setup menu display status to normal status.
2	[Enter] key		- Selects the menu to be set and shifts to the next hierarchy. - Determines and saves the parameter value.
	[Cleaning] key	If held down for 2 seconds or more, starts cleaning the printer head.	-
3	[Cancel] key	- During printing: Terminates printing forcibly and deletes 1 file of remaining data. - During reception/analysis: Deletes the data that has been already received/analysed and ignores 1 file of data received after that.	- Returns to the previous menu hierarchy. Changed parameter values are disabled. - Changes the setup menu display status to normal status.
	[Cut] key	DO NOT USE	-
4	[Back] key	DO NOT USE except to toggle Roll Lamp (below) to Green	Changes the menu in reverse order.
5	[Next] key	DO NOT USE	Changes the menu in forward order.
6	[Reverse feed] key	DO NOT USE	-
	[∧] key	DO NOT USE	- Changes the setting value in the forward direction. - Increases the value when inputting values.
7	[Forward feed] key	DO NOT USE	-
	[∨] key	-	- Changes the setting value in the reverse direction. - Decreases the value when inputting values.
8	[Power] key	Turns the printer on and off.	Turns the printer on and off.

TABLE 2-4 OPERATION KEYS FUNCTIONS

2.3.4.2 LCD Monitor and Status Lamps

No.	Name	Color	Status	Function
1	Power lamp	Green	On	The printer is switched on.
			Blinking	An error has occurred. Error content will be displayed on the LCD monitor.
			Off	The printer is switched off.
2	Data lamp	Red	On	- The printer is analyzing received data. - The printer is printing data.
			Blinking	The printer is receiving data.
			Off	The printer is not receiving, analyzing or printing data.
3	Roll lamp	Green	On	The printer is set to roll media.
			Off	The printer is set to cut media. **INCORRECT SETTING**
			Off	The printer is set to roll sheet. **INCORRECT SETTING**
			Off	The plot mode is set to High speed. **INCORRECT SETTING**
4	LCD monitor	-	-	This monitor displays the operation status and error messages of the printer.

TABLE 2-5 LCD MONITOR & STATUS LAMPS

2.4 Printer Status

The status of the printer is explained below.

2.4.1 Normal

Indicates that the printer can print when the platen is loaded.

Both indicator LED's (Power lamp & Roll Lamp) are green.

2.4.2 Setup Menu

The settings required for normal printing are usually made via the printer driver or RIP, but can also be made using the operation panel.

2.4.3 Changing Printer status

(1) Normal → Setup Menu Display

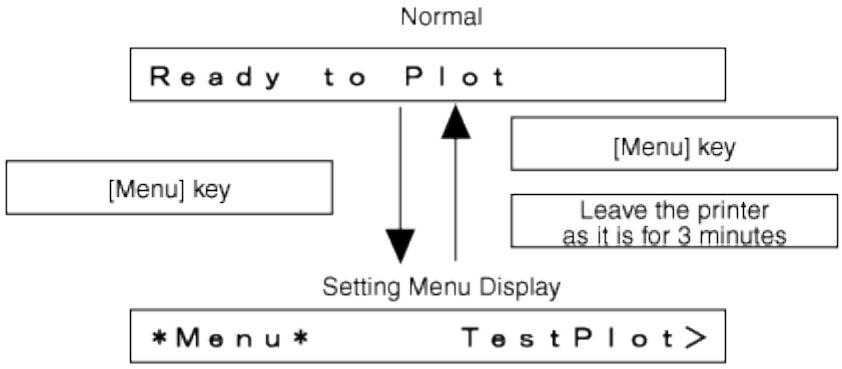
When the printer is in "normal" mode, press the [Menu] key

- The operation panel will shift to the setup menu display and show "`*Menu* TestPlot>`".

(2) Setup Menu Display → Normal

While the printer is in setup menu display, if either of the following operation is done, the operation panel shifts to Normal display.

- [Menu] key on operation panel is pressed.
- In the Setup menu, leave the keys untouched for three minutes.



NOTE

For details on Status message, refer to ☞ *6.2.1 "Operation Status" p.119*

3.Initial Setup & Basic Operations

3.1 Introduction

This chapter provides information on the initial setup and basic operation of the M2 Printer.

It is highly recommended that the initial setup of the printer be performed by a DTG trained & authorized technician. Damage caused by incorrect setup will not be warrantied.

Initial setup should be undertaken in the following order:

1. Position the printer – refer to *3.3 "Choosing a Place for the Printer" p.25*
2. Remove packaging materials ☞ *3.6.1 "Removal of Shipping Tape" p.43*
3. Load colour inks (before power is applied to the printer) ☞ *3.6.2 "Initial Ink Fill Process - Colours" p.44*
4. Load white ink ☞ *3.6.3 "Initial Ink Fill Process – White" p.47*
5. Load media for printing ☞ *3.6.4 "Loading Media for Printing" p.49*

3.2 Before you Get Started

3.2.1 Commit to Maintenance

Your DTG M2™ represents a significant investment, not only of your money but also of your commitment to your new business opportunity with the DTG M2™.

Whilst the mechanics of the printing unit of the M2 are similar to that of a normal inkjet printer, printing on fabric is not the same as printing on paper. Fabric generates much more dust, printing on fabrics requires a much greater volume of ink, and the white ink pre-treatment can become airborne during spraying and can ingress into the M2. Each of these factors individually can cause problems with your DTG M2™, and in combination can be critical to the ongoing operation of the M2. All is not lost, however! A few minutes of your time each day spent undertaking some basic maintenance tasks on the M2 will ensure it's continued optimal performance. Please refer to the sections within this User's Guide on Preventative Maintenance for further information.

3.2.2 Get to Know your M2

Starting a new business or adding to your existing product line with the DTG M2™ is a very exciting, and potentially very profitable time. Don't get too carried away though and start accepting orders before you even have your printer. Allow plenty of time to become familiar with your M2 and to learn not only the basics, but also the variables that can impact on your finished product. These variables include image types, fabric types, your operating environment, garment preparation, and curing of the garment. Thoroughly read this manual, ask questions of your DTG Technician or Distributor, talk to other users (see various internet forums). Be prepared to ruin a few shirts. Be realistic about deadlines when accepting orders and allow yourself sufficient time (and perhaps a couple of extra garments) to complete the order.

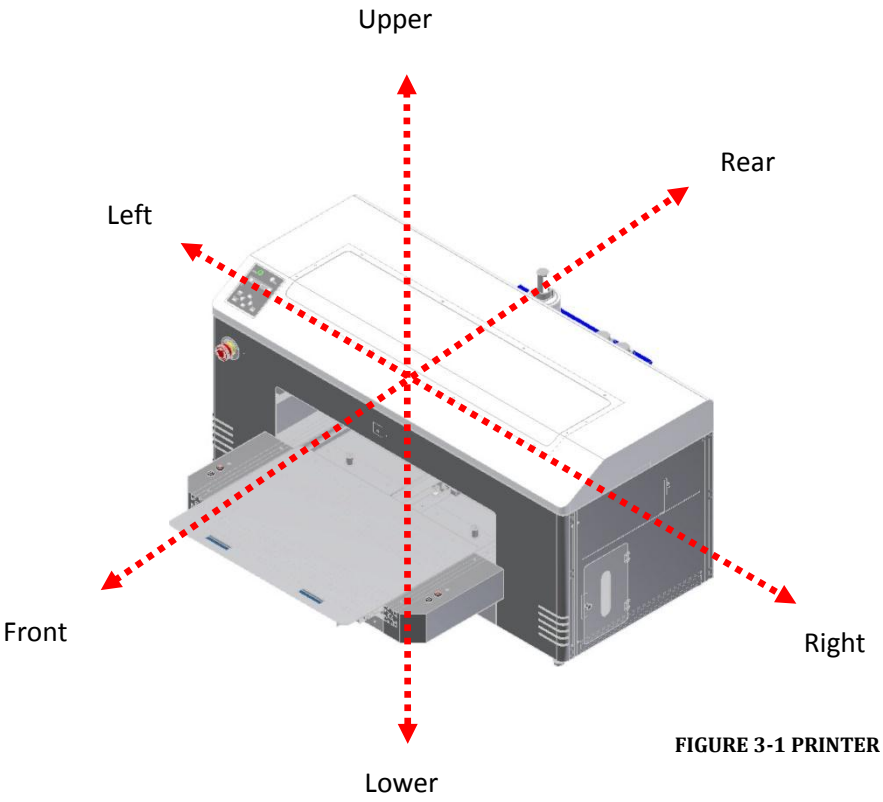


FIGURE 3-1 PRINTER ORIENTATION

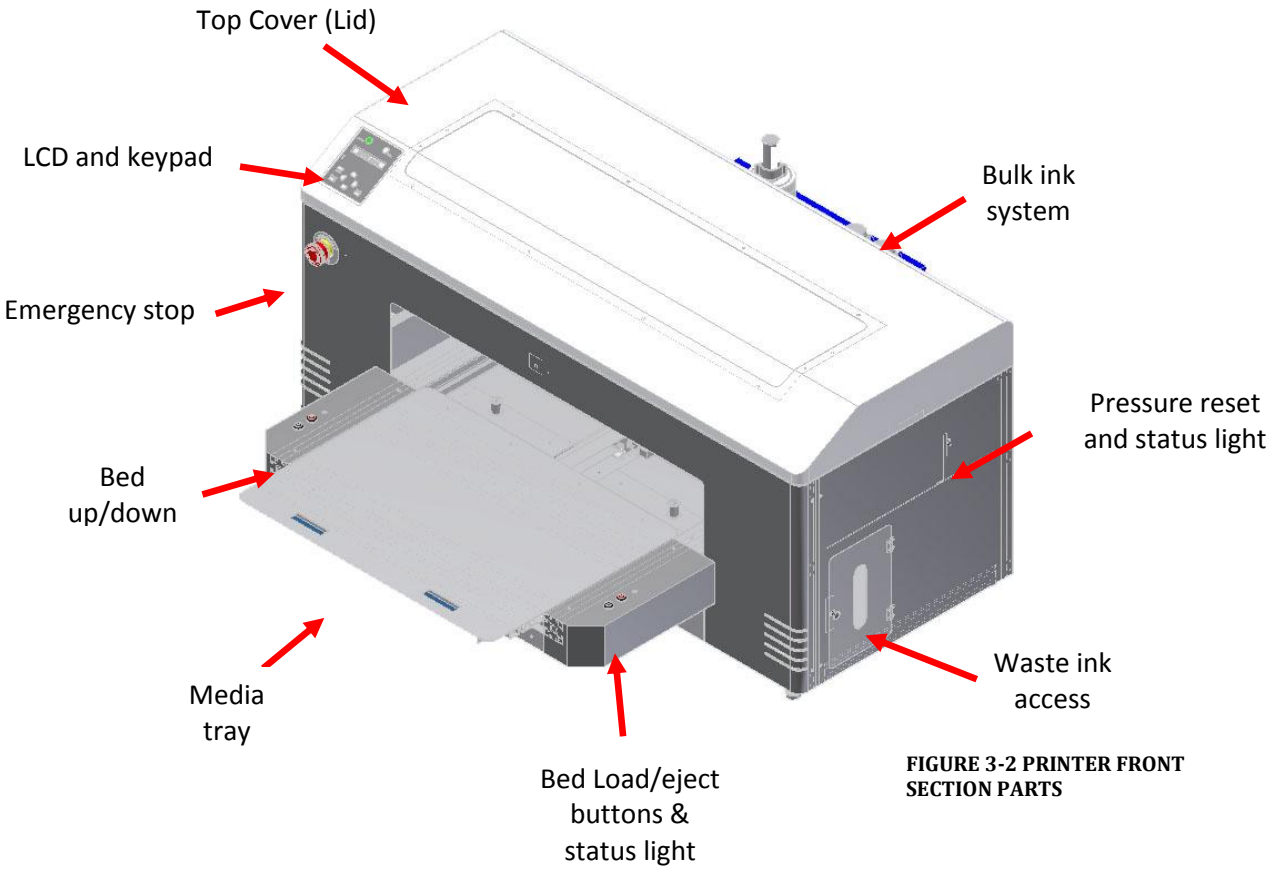


FIGURE 3-2 PRINTER FRONT SECTION PARTS

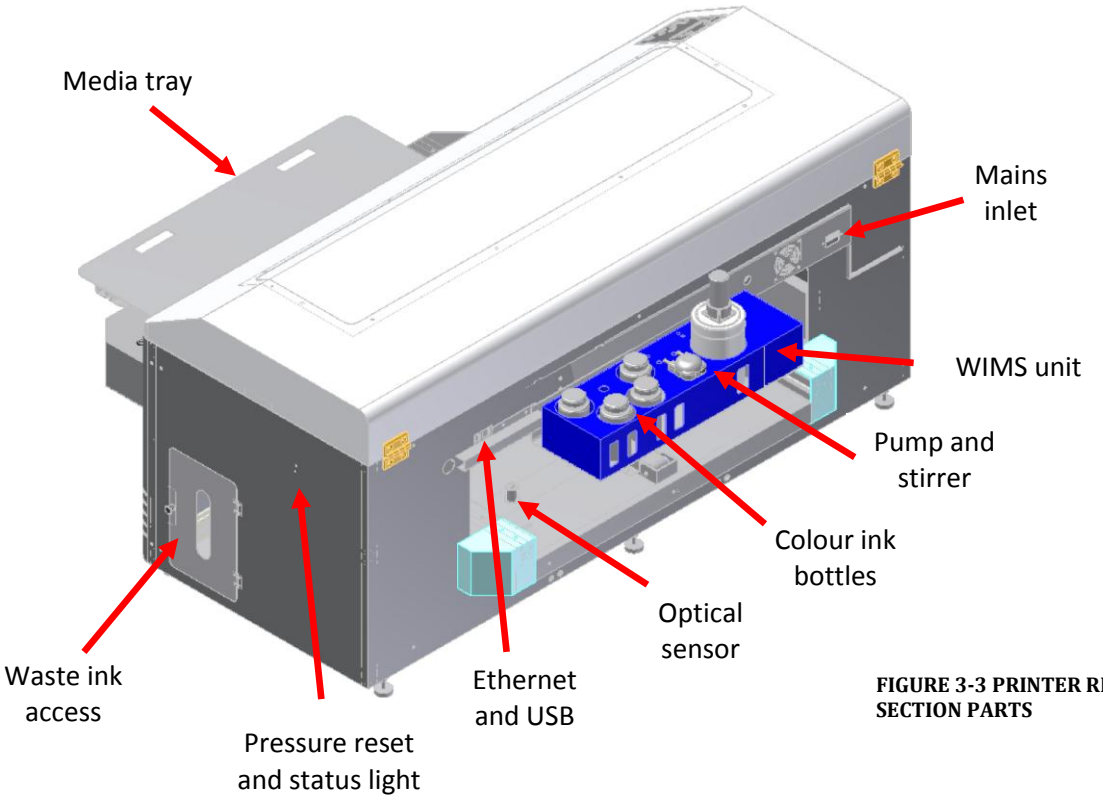


FIGURE 3-3 PRINTER REAR SECTION PARTS

3.3 Choosing a Place for the Printer

WARNING

- Do not place the printer in a location under the following conditions. Doing so may cause the product to fall over, become damaged, or cause serious injury:
  - Unstable or shaky surfaces.
  - Slippery, slanted or angled surfaces.
  - Locations that are subject to vibration from other products.
- Do not stand, or lean, on the printer or place any objects on it. Doing so may cause it to fall over, become damaged, or cause injury.
- Do not cover any ventilation holes or slots of the printer with anything at all. Doing so could prevent the printer from ventilating and cause fire.
- Keep the printer away from damp, humid or dusty areas. Failure to do so may result in electrical shock or fire.

3.3.1 Installation Environment Requirements

Choose a place for printer installation following the requirements of the table below.

Installation space		5m² or more, 2.6m or more is required for the width	
Floor loading capability		Up to 3000Pa (450kgf/m²) or more	
Electrical specifications	Voltage	AC 100 V - 120 V ± 10% or AC 200 V - 240 V ± 10% (auto-switching)	
	Frequency	50/60Hz ± 1Hz	
	Capacity	Up to 4A or more	
Environmental conditions		*Temperature*	*Humidity*
	Operation environment	18º C (64F) to 30ºC (86F)	20% to 80%, with no condensation
	Printing accuracy warranty range	18ºC (64F) to 28ºC (82.4F)	40% to 60%, with no condensation
	Rate of change	2ºC per hour or less	5% per hour or less

TABLE 3-1 INSTALLATION ENVIRONMENT REQUIREMENTS

NOTE

Avoid the following temperature and humidity conditions. Otherwise, printed images may appear differently from what you expect and machine operation may be erratic or incorrect.

- Places where sudden changes in temperature or humidity are expected, even if the condition is within the range specified within this document.
- Places where direct sunlight or excessive lighting conditions are expected
- Places where air conditioners blow directly.

Impression Technology strongly recommends that the printer should be installed where air conditioning airflow, humidity and temperature can be adjusted easily.

3.3.2 Required Space

Install the printer on a flat surface that meets the following conditions:

- The load bearing surface will fully support the full weight of the printer (and/or stand) plus 100%.
- The load bearing surface has an angular difference from level by no more than 2 degrees.
- The load bearing surface is textured and firm enough to be considered a non-slip, hard surface.
- The load bearing surface will fully support lateral forces in all directions in excess of 100kg.

NOTE

For printer options ☞ *7.3 "Options/Supplies List" p.157*

DTG M2 Printer dimensions are illustrated below

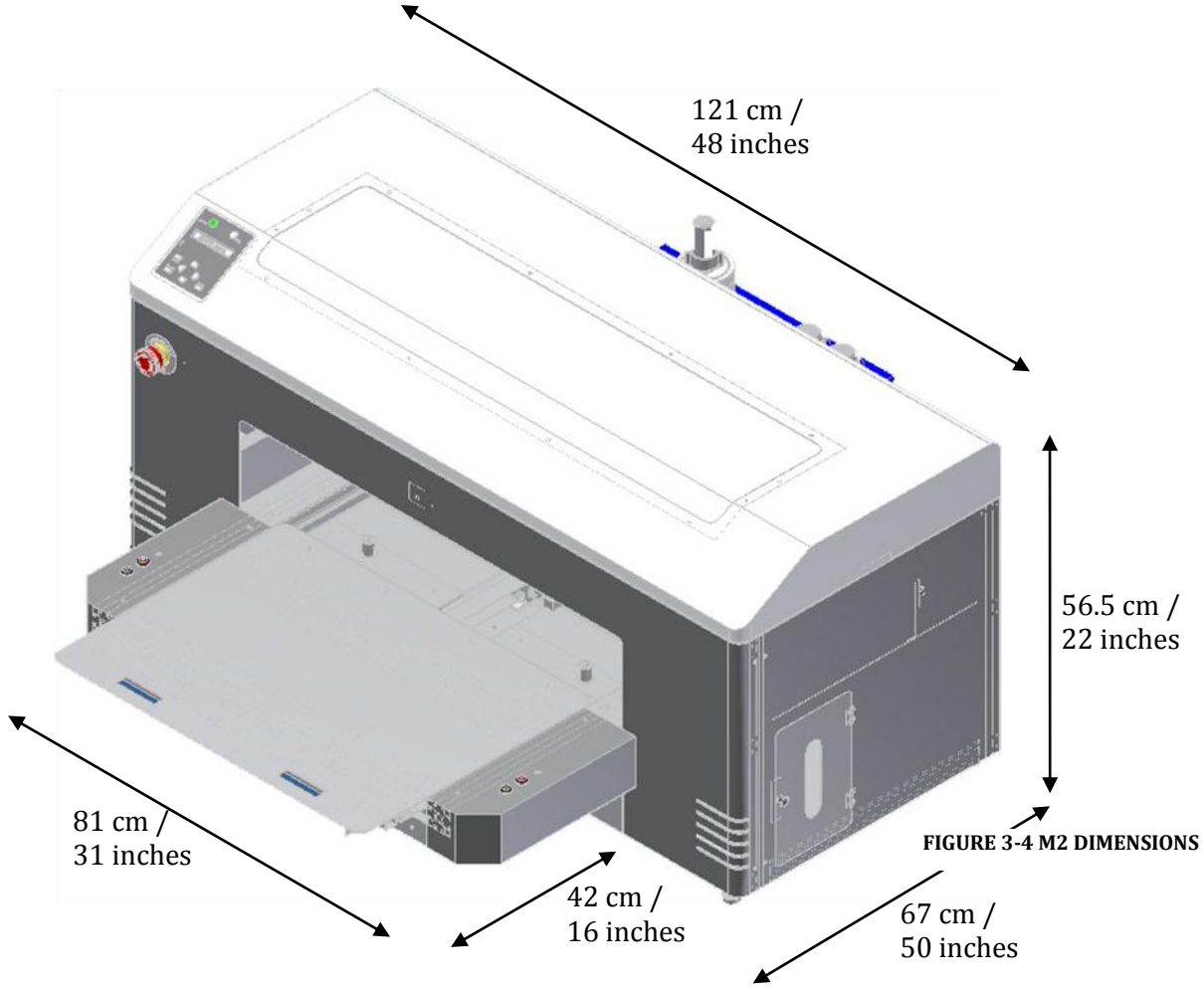


FIGURE 3-4 M2 DIMENSIONS

CAUTION

Do not use the DTG M series on unstable surfaces.

3.4 Minimum Computer Requirements

Ensure that your computer has the minimum specifications as recommended here to ensure optimum performance of your printer and the RIP:

Processor	Requires a PC based on Quad Core (2.2 GHz) technology or higher processor.
Operating System	Microsoft® Windows® XP or later.
Hard Disk	Hard Drive with SATA interface and 100 GB free disk space.
RAM	2GB DDR2 or more.
Monitor	SVGA or better with resolution of 800 x 600 or better. 16 Bits or more color support recommended.

3.5 Basic Operations

Some basic printer operations are described here as they are referred to in the Initial Setup instructions.

3.5.1 Switching the Printer ON

WARNING

- Be sure to use the power cable supplied with the printer. If incorrect power cables are used, electric shock or fire may result
- Do not use a power cable that is damaged. To do so could result in electric shock or fire.

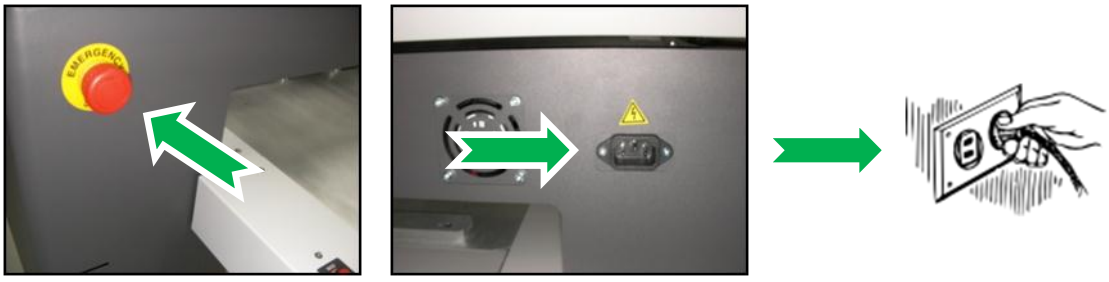
1. Ensure that the emergency stop is engaged by pressing hard on the red cap.
2. Plug the supplied mains cord into the socket at the rear of the printer.

CAUTION

Pay attention to the following when handling the power cable:

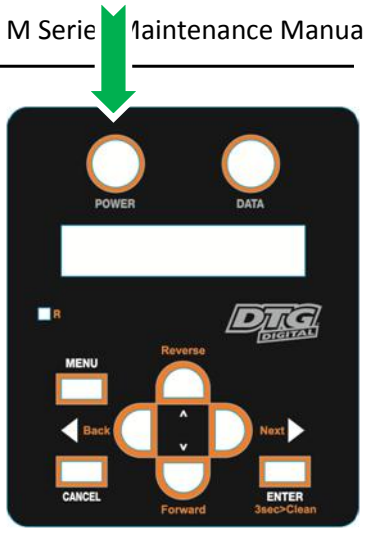
- Do not do anything forcefully (e.g. pull, bend, twist) on the power cable
- Do not place heavy objects on the power cable
- Do not route the power cable near heat sources

3. Failure to remove the shipping tape before powering up the printer may result in catastrophic damage to the printer drive mechanism.
4. Plug the other end of the power cord into the wall socket and turn ON.

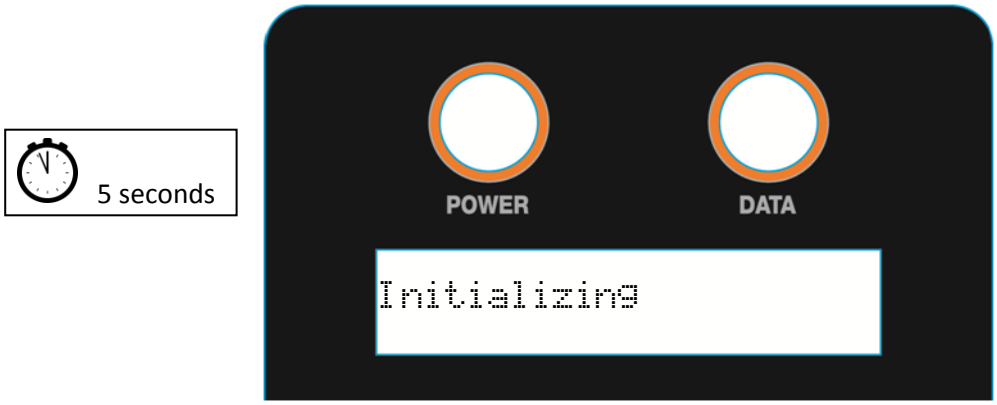


5. Rotate the red cap of the emergency stop to allow the printer to receive power.

6. Press the Power button on the operation panel.



7. After a short delay the screen will display `Initializing`



NOTE

The printer is likely to perform a short head cleaning operation shortly after turning on.

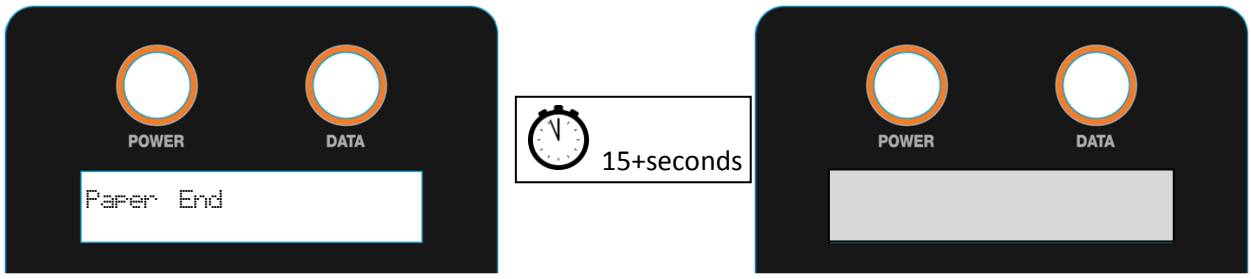
CAUTION

Do not attempt to operate the printer during this period.

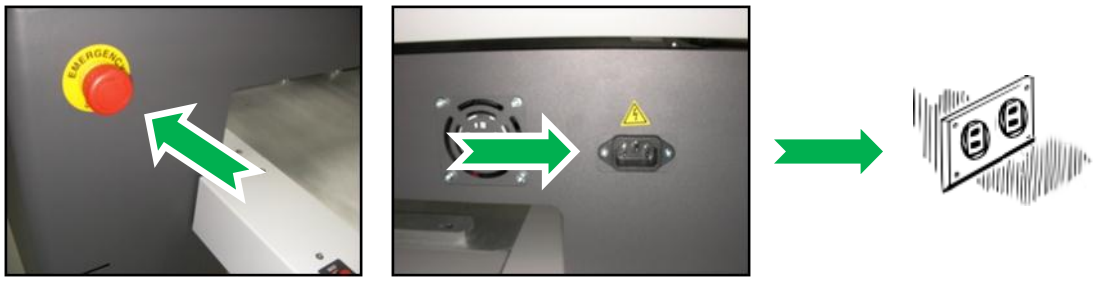
8. After a short delay the screen will display `Paper End` indicating that the printer is ready for operation.

3.5.2 Switching the Printer OFF.

1. Press the Power button on the operation panel. After about 15 seconds or so the Operation panel display will be blank.



2. Ensure that the emergency stop is engaged by pressing hard on the red cap.
3. Unplug the power cord from the rear of the printer.



NOTE

During normal non-operational periods such as over night and during weekends it is recommended that the printer is NOT switched off.

CAUTION

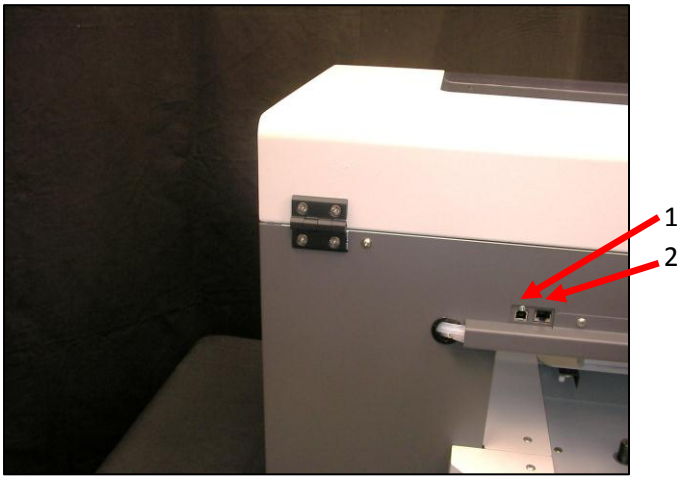
Do not attempt to operate the printer during this period.

3.5.3 Connecting the Printer to the PC

The DTG M2 has both Ethernet and USB interface ports for connection to the PC. You will require either a USB or Ethernet interface cable for connecting to the PC, depending upon your objectives.

3.5.3.1 Connecting Ethernet (network) interface cable

1. Turn off both your PC and the printer ☞ *3.5.2 "Switching the Printer OFF." p.31*
2. Insert the network interface cable connector into the network interface connector port located at the rear of the printer:



No.	Part name
1	USB interface connector port
2	Network interface connector port

3. Connect the other network interface connector to your PC.

TIP

- Refer to the Operation Manual of your PC for connection to your PC

3.5.3.2 Connecting USB interface cable

NOTE

Install the printer driver ☞ *3.6.9 "Installing & Using Printer Drivers" p.66* before connecting the USB cable

4. Insert the USB cable into the USB connector on the back of the plotter.
5. Connect the other USB cable connector to your PC.

TIP

- Refer to the Operation Manual of your PC for the connection to your PC
- USB connection supports Windows 98 and higher
- This printer supports USB 2.0. If the connection is made under the following conditions, the speed may decrease to the level measure ins USB1.1
    - When the USB connection is used in Windows 98
    - When your PC does not support USB 2.0
    - When a USB hub of not USB 2.0 type is used
- When using the printer with USB connection, install the printer driver into your PC using the printer driver provided with the plotter

3.5.4 Confirming Default Settings

This section gives an overview of the Setup Menu and the M series default settings.

There are some critical M series default settings that ensure that the printer operates in accordance with the M series specifications. If these settings are not set at the correct value, the printer will not behave correctly. ☞ *Table 3-2 Setup Menu Structure page 38*

CAUTION

Take care not to alter the default settings of the printer. If it is necessary to enter the Setup Menu for any reason, follow the instructions below carefully and ensure that settings are maintained as described in ☞ *3.5.4.4 "Setup Menu Structure" p.38*

3.5.4.1 Enter the Setup Menu

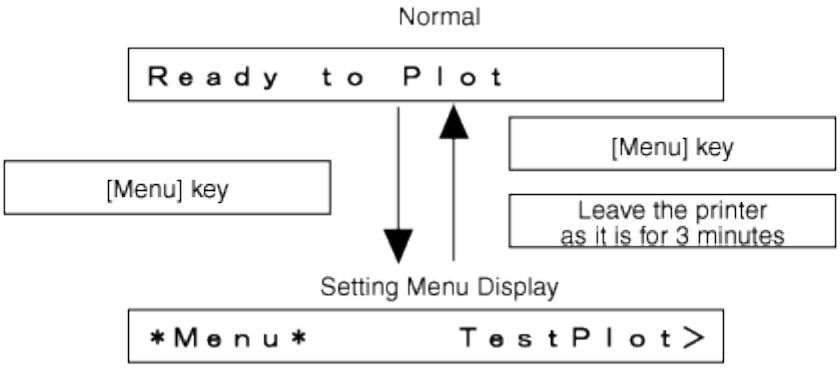
When the printer is in "normal" mode, press the [Menu] key

- The operation panel will shift to the setup menu display and show "*Menu* TestPlot>".

3.5.4.2 Return to Normal Display

While the plotter is in setup menu display, if either of the following operation is done, the operation panel shifts to Normal display.

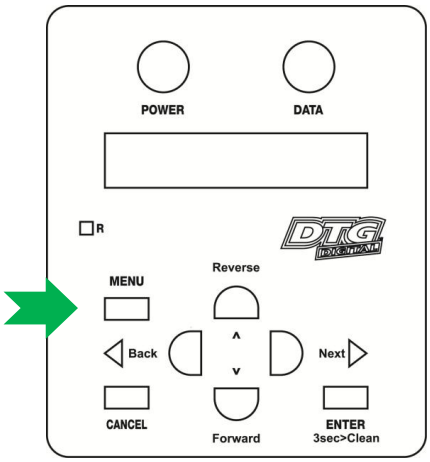
- [Menu] key on operation panel is pressed.
- In the Setup menu, leave the keys untouched for three minutes.



3.5.4.3 Menu Setup Procedure

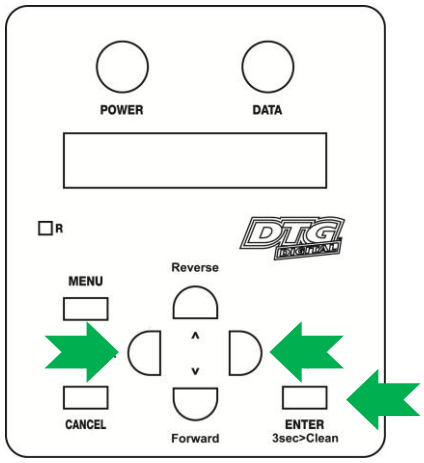
Follow the following procedure to configure various setup menus.

1. Check that the operation panel is Normal (Display will read `Ready to Plot` or `Paper End` or `End of Roll`).
2. Press the [Menu] key on the operation panel.



- "`*Menu* TestPlot>`" will be displayed on the operation panel.
- The setup menu display will be displayed.

3. Press the [Back] key or [Next] key on the operation panel to select a setup item and press the [Enter] key.

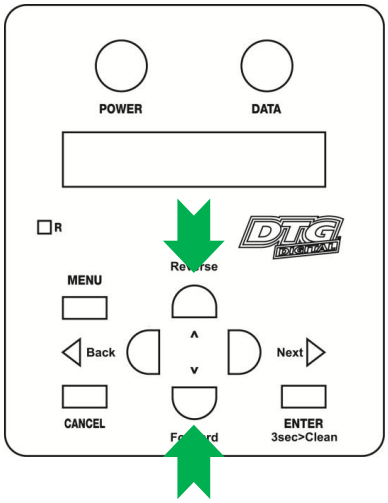


- The settings will be confirmed.
- When setup item has a submenu, the submenu will be displayed.

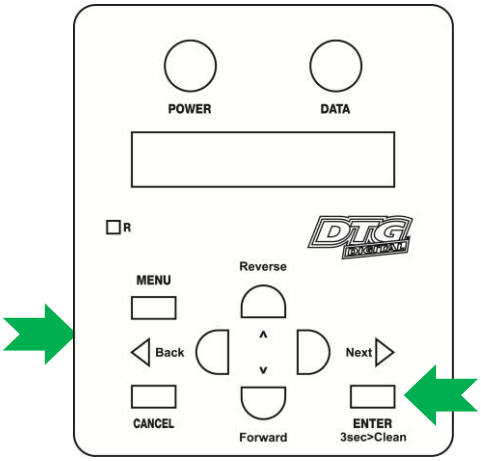
NOTE

When a setup item has a submenu, [>] is displayed on the right end of the LCD monitor of the operation panel.

4. If a submenu item displayed on the LCD monitor of the operation panel is blinking, it's setting can be changed.
   Press the [Forward] key or [Reverse] key to change the setting.



5. To save the changed setting, press the [Enter] key on the operation panel.

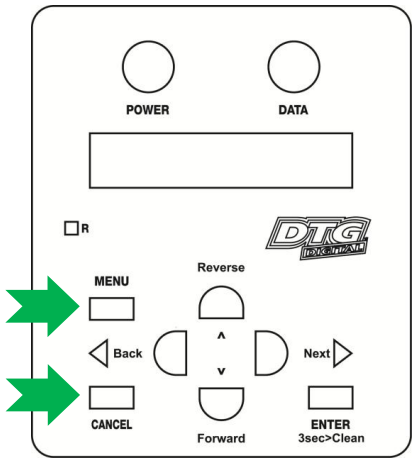


- The setting will be saved and the next setup item will be displayed.

NOTE

If the [Cancel] key, [Forward] or [Reverse] key is pressed after changing a setting, without pressing [Enter] key, that setting will not be saved.

6. Press the [Menu] key or [Cancel] key on the operation panel to exit from the setup.



- The previous setup menu will be displayed.
- When the main menu is displayed, the screen turns to Normal.

3.5.4.4 Setup Menu Structure

The setup menu has the following items.

< > parts in each list are initial settings

[ ] parts in each list are M series default settings (if different from initial settings).

TABLE 3-2 SETUP MENU STRUCTURE

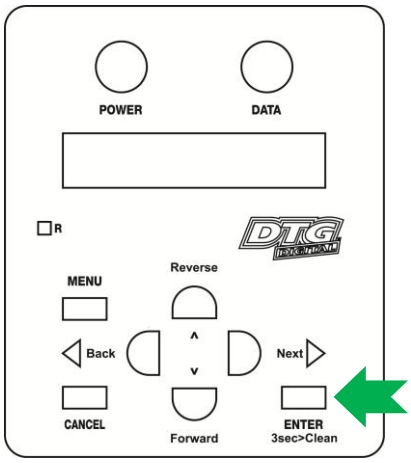
Setup Menu Item	*Setup Menu Sub Menu Item*	*Setup Menu Sub Menu Item / Setting Value*		
Test Plot Menu	SetupPlot			
	NozzleCheck			
	AdjustPlot			
	PalettePlot			
	Maintenance			
MediaSet Menu	Media	MonoTrac		
		Col.Trac		
		[Plain]	PF	ConfirmPrint
				InitialChange
				<InitialPrint>
				MicroChange
				MicroPrint
			RollCut	**[Off]**
				On
			RollCutMethod	<2steps>
				3steps
		<Coat>		
		Film		
		Photo		
		User1		
		User2		
		User3		
		User4		
	CutSheetSize	Auto		
		<Vert.>		
		Hori.		
	TopFeed	<0mm> to 100mm		
	Manage Roll	<Invalid>		
		Roll1		
		Roll2		
		Roll3		
		Roll4		
	Cut RollTop	<0mm> to 500mm		

Setup Menu Item	*Setup Menu Sub Menu Item*	*Setup Menu Sub Menu Item / Setting Value*
Command Menu	SHOULD NOT BE DISPLAYED	SET MENUMASK TO NORMAL
Pen SetupMenu	SHOULD NOT BE DISPLAYED	SET MENUMASK TO NORMAL
Layout Menu	Layout	On
		<Off>
	LayoutMethod	MAX-MIN
		<Command>
	Margin	<Normal>
		Full
	CutLine	On
		<Off>
	LayoutTimer	Off
		10s to <120s> to 800s
Network Menu	IPaddress	000.000.000.000 to <192.168.001.253> to 255.255.255.225
	SubnetMask	000.000.000.000 to <255.255.255.225> to 255.255.255.225
	Gateway	000.000.000.000 to <192.168.001.254> to 255.255.255.225
	BiDir Port	SHOULD NOT BE DISPLAYED SET MENUMASK TO NORMAL
	MACAddress	
Utility Menu	Menu Mask	<Normal>
		OFF
		AlwaysOFF
	Error Display	On
		<Off>
	Intitial	Yes
		<Off>
	DataDump	Start/End
		All
	CutterChange	<No>
		Yes
	On Cleaning	On
		<Off>
	Prefeed	<Manual>
		Data
		Take-up
	PrefeedAmount	<0mm> to 3000mm

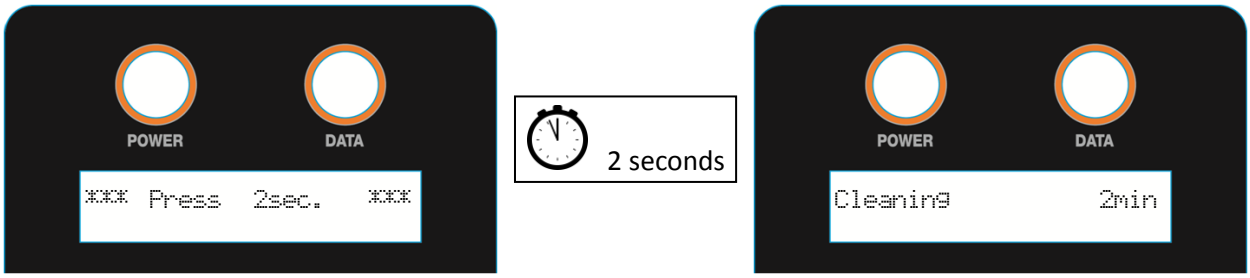
Setup Menu Item	*Setup Menu Sub Menu Item*	*Setup Menu Sub Menu Item / Setting Value*	
Utility Menu	Effect	<None1>	
		None2	
		Wave1	
		Wave2	
		Fuzz1	
		Fuzz2	
		Wow1	
		Wow2	
		Fine & Wave1	
		Fine & Wave2	
	AutoCL: Setup	Waiting Time	<0min> to 1440min
		WaitingKind	<Short>
			Long
			Normal
		PrintingTime	<0min> to 180min
		PrintingKind	<Short>
			Long
			Normal
		BeforePrint	<Off>
			On
		BeforePrtKind	<Short>
			Long
			Normal
	Spitting	<Origin>	
		On Media	
	PassCount	-999cnt to 999cnt	
Consumption Menu	Remain Roll	**m	
	RemainCutterLif	0% to 100%	

3.5.5 Performing a Head Clean from the Operation Panel

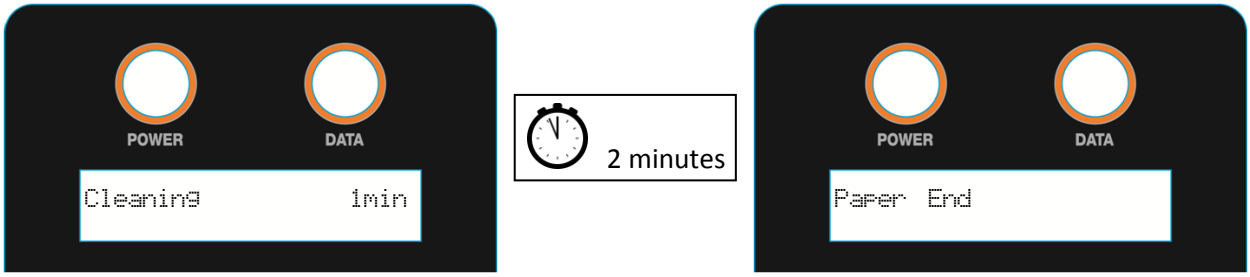
1. Press and hold the '**ENTER**' key.



2. The operation panel will display *** Press 2sec. *** . After about 2 seconds the printer will begin head cleaning.



3. The operation panel will display the remaining time until the clean is finished. After about two minutes or so the clean operation will complete.



NOTE

Head cleaning will consume some ink during operation, this is normal with all printers.

3.6 Initial Setup

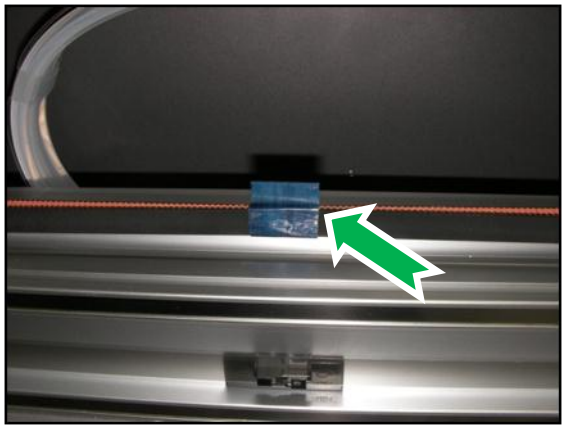
Once your printer has been removed from the crate and positioned as per *3.3 "Choosing a Place for the Printer" p.25* , use the following directions to prepare the printer for printing.

3.6.1 Removal of Shipping Tape

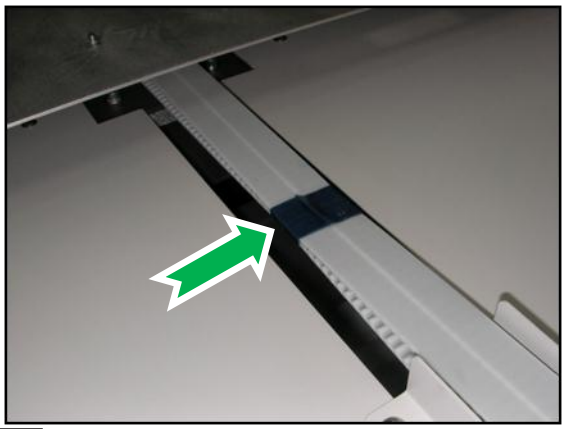
NOTE

No tools are required for this procedure.

1. Remove any tape from the printer top cover (lid) then open the top cover (lid).
2. Locate the shipping tape near the centre part of the carriage belt as shown.
3. Carefully remove this tape, do not use any form of cutting instrument.



4. Locate the shipping tape on the media tray drive belt.
5. Carefully remove this tape, do not use any form of cutting instrument.



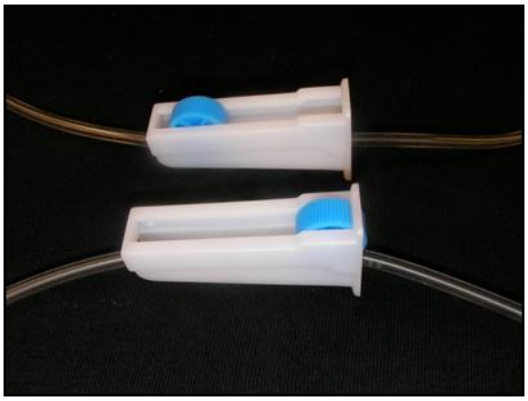
CAUTION

Failure to remove the shipping tape before powering up the printer may result in catastrophic damage to the printer drive mechanism.

3.6.2 Initial Ink Fill Process - Colours

NOTE

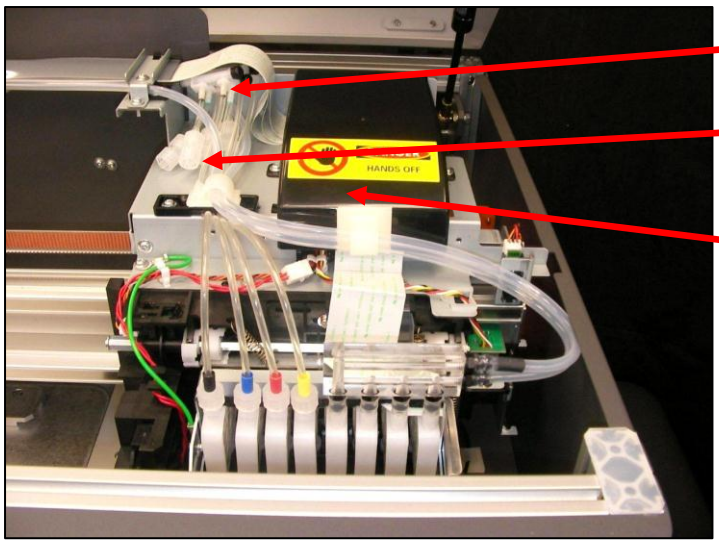
The syringe & tube adapter kit (from maintenance kit supplied with M series printers) are required for this procedure. Use protective gloves to avoid stained fingers.



1. Ensure that all tube clamps are in the open position as shown, wheel at the wide end.
2. Unscrew the lids on each of the four colour ink containers and ensure they are empty. There may be a small quantity of shipping fluid inside which will need to be poured out.
3. Fill each container with DTG ink to just below the curve at the top of each container as shown.

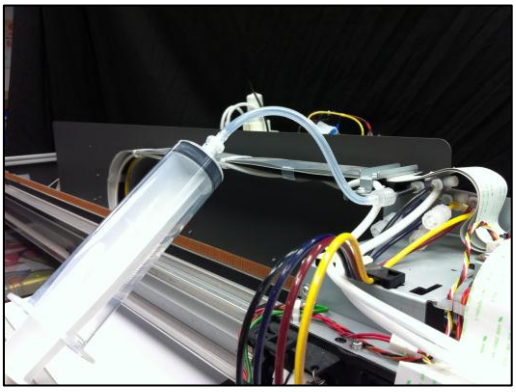
4. Take note of the coloured band on each of the colour ink lines, and match this to the ink in each of the containers when screwing the containers back in to the lids. To screw the containers to the lids, simply hold the lid firmly and screw the container up into the lid.

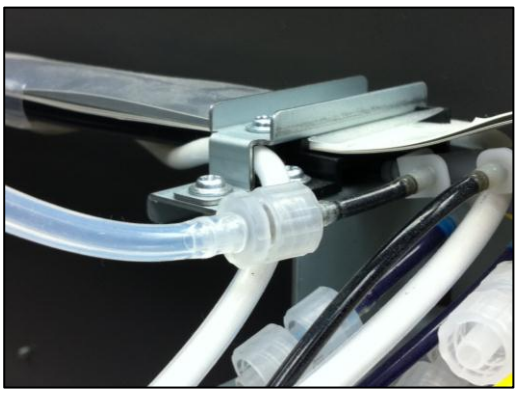
5. Open the top cover of the printer and locate the connector caps (4) on the 3 way joints for the C,M,Y & K ink tubes (located to the left of the CR board assembly cover).



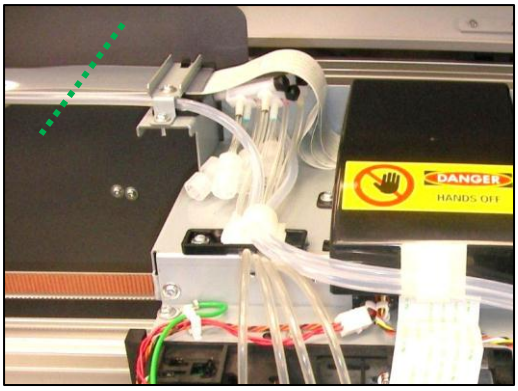
No.	*Part name*
1	3 way joints
2	Connector caps
3	CR board assembly cover

6. Remove the cap from the connector for the first ink colour that you wish to fill.
7. Connect the syringe & tube adaptor kit to the un-capped connector.





8. Draw on the syringe plunger to pull the ink through from the ink bottle towards the 3 way joint. Stop drawing when the ink reaches (approximately) the position indicated here:



TIP

Minimise ink wastage by not allowing ink to be drawn all the way into the tube connector kit and syringe.

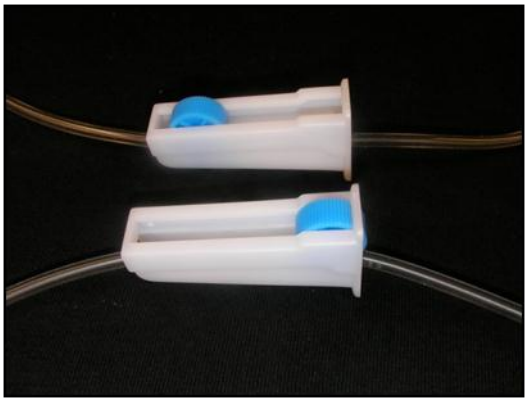
9. Disconnect the tube connector kit and re-connect the connector cap.
10. Repeat steps 7 – 9 for each of the remaining ink colours.
11. Ink can be "charged" through to the dampers & print head by turning the printer on ☞ *3.5.1 "Switching the Printer ON" p.29* and ☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41*

3.6.3 Initial Ink Fill Process – White

NOTE

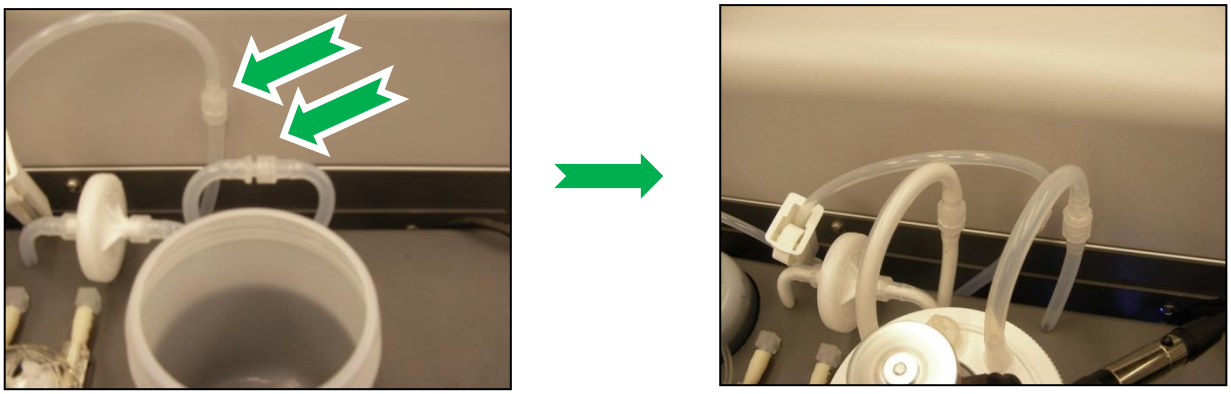
No tools are required for this procedure. Use protective gloves to avoid stained fingers.

1. Ensure that all tube clamps are in the open position as shown, wheel at the wide end.



2. Ensure that the printer is switched off ☞ *3.5.2 "Switching the Printer OFF." p.31* Switching the Printer OFF.

3. Locate the white ink feed and return tubes as shown, they will be connected to ensure that there is shipping liquid in the lines during transportation & prior to commissioning of the printer. Disconnect them and join them to the white ink tank as shown:

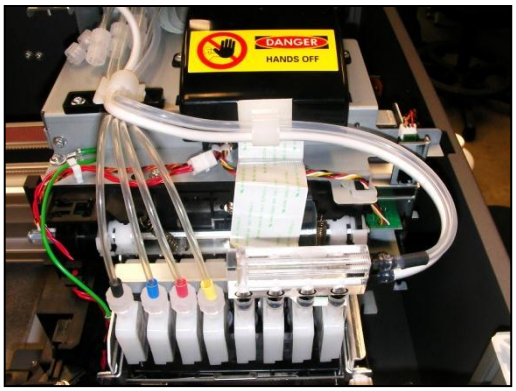


4. Switch the on the power to the printer as described in *Section 3.5.1 "Switching the Printer ON" p.29*
5. This will supply power to the WIMS system, allowing any shipping fluid in the ink lines to circulate back to the white ink container.
6. After several minutes, again remove power from the printer, to stop the WIMS circulation.
7. Unscrew the white ink container lid by holding the lid and rotating the container. There will be a small quantity of shipping fluid inside which will need to be poured out. Ensure the container is empty & clean.

8. Fill the container with DTG white ink to just below the curve at the top of the container as shown.

9. Now screw the container back up to the lid. To do this simply hold the lid firmly and screw the container up into the lid. Double check that all tube clamps are in the open position and all connectors are firmly joined.

10. Switch the printer on in accordance with the instructions in ***Section 3.5.1 "Switching the Printer ON" p.29***
11. Observe the white ink flowing through the tubing, when it begins to flow back into the white ink tank the white ink system is charged and the dampers and head can now be filled by doing head cleans.



12. Perform a head clean in accordance with the instructions in ***Section 3.5.5 "Performing a Head Clean from the Operation Panel" p.41*** and then follow the instructions in ***Section 3.6.4 below*** regarding the loading of media and doing nozzle test prints.

3.6.4 Loading Media for Printing

1. Pull the platen tray forwards to allow easy access to the platen as shown. Then remove the platen from the platen tray and place on a firm level surface.

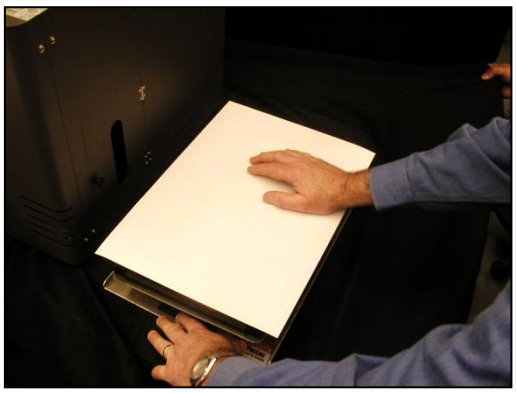
TIP

If you are using paper for test printing purposes lightly spray the platen surface with spray tack adhesive.

CAUTION

Be sure not to use the spray close to the printer as air-borne adhesive may make it's way into the printer and cause damage to the print head

2. If you are using paper, gently smooth the paper on to the platen with your hand to ensure it is flat.



3. If you are loading fabric be careful not to smear or touch the surface you will be printing. Gently pull the fabric straight and tuck the edges into the seam of the rubber seal underneath the top of the platen. Remove all wrinkles GENTLY, do not distort the fabric.

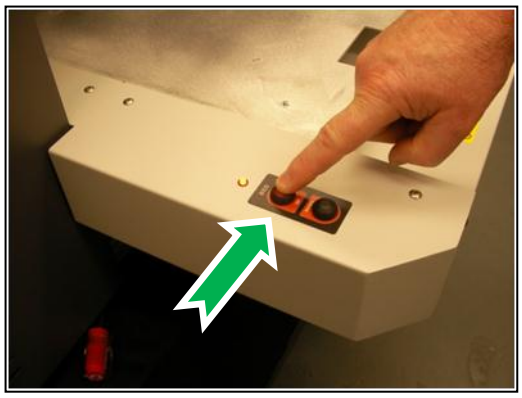
4. Carefully insert the rear of the platen into the Acu-Lok slot and ensure that the alignment pins are protruding correctly through the holes in the front of the platen bed.

3.6.5 Checking media height

NOTE

The Printer has an interactive protection system that monitors the height of the media on the media tray by means of a safety beam that continually watches the gap between the print head and the media. This is to help prevent damage to the print head caused by collision with the media or platen. The safety system can be disabled by pressing and holding both the UP and DOWN keys until the media status light turns yellow. In this condition the automatic safety system will be disabled and only the DOWN button will be operational.

1. Push the platen tray forwards so that about half of the platen is inside the printer. If the platen is too high the platen LED will turn red and the platen will lower its self. If the platen LED is yellow the printer is in platen gap lock mode, press both the UP and DOWN buttons together to turn the lock mode off. The platen LED should go green to indicate all is well and the optimum print head gap is now set.
2. To set the correct height press and hold the UP button, the platen will begin to rise until the internal safety beam detects that the platen height is correct. The platen LED will go red and the platen will stop moving, release the UP button and the LED will turn green indicating that the platen height is now set.

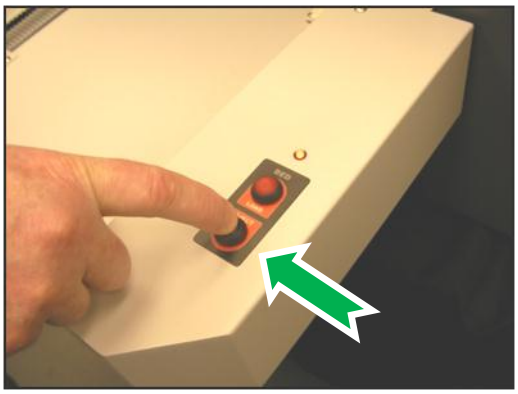


NOTE

The platen LED has three different colours during operation. GREEN which indicates that the platen should not be high enough to a collision between print head and media.. YELLOW indicates that the automatic head protection system is OFF and there is a possibility of catastrophic collision damage to the print head. When the indicator is RED the platen bed will begin lowering itself to try and protect the print head from possible collision damage.

3. Press the LOAD button and the printer will emit a series of beeps and after a short delay the platen will move into the printer. Do not impede the platen tray during operation as this may damage the printer

4. When the printer has loaded the media the media LED will turn green indicating that the printer is now ready to accept data from the computer to perform a print.



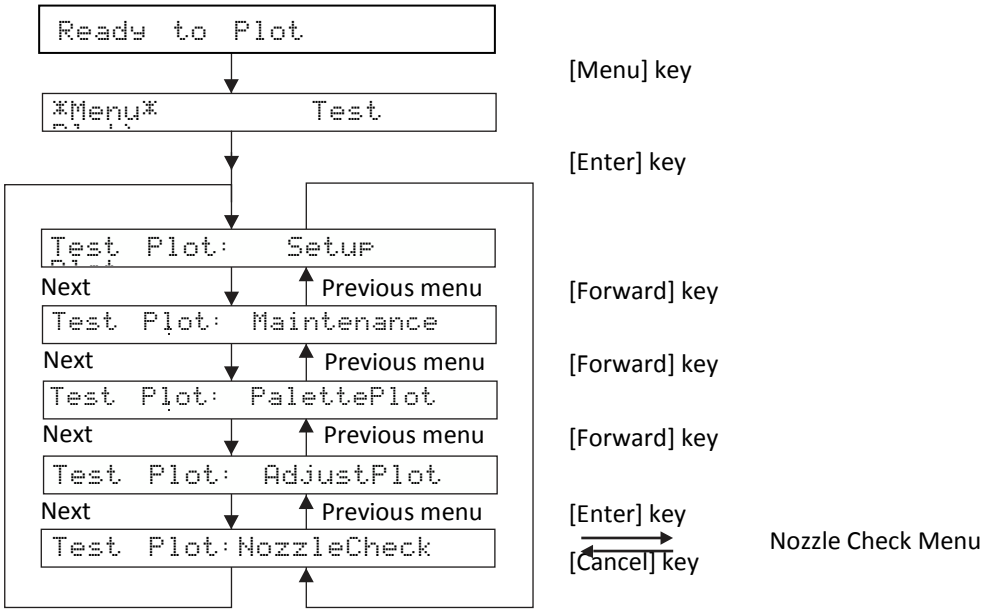
CAUTION

It is advisable to leave the head safety system operational at all times to assist in protecting the print head. Print heads DO NOT CARRY ANY WARRANTY what so ever.

3.6.6 Performing a Nozzle Check Test Print

The Printer has the ability to print a nozzle test print which will indicate the integrity of the nozzle orifices. Blocked nozzles will cause the printer to produce poor quality output.

1. Load a sheet of clean paper for printing in accordance with ***Section 3.6.4 "Loading Media for Printing" p.49*** Follow the menu selection shown below to access the nozzle test print utility.



TIP

The summary of the key presses above to execute the Nozzle Check test print is: [Menu] [Enter] [Forward] [Forward] [Forward] [Enter].

To access the last menu option in a menu tree such as the test print tree above, the [Reverse] key may be pressed instead of scrolling through the options using the [Forward] key.

In the case of the above Nozzle Check test print, the key presses would be: [Menu] [Enter] [Reverse] [Enter]

The printer will print a pattern which should resemble the picture below. Each horizontal line represents the output from each of the nozzles. There will be an identical pattern printed directly below this in white ink which will not be visible unless you print onto a clear sheet of film or thin metal plate. As you can see from the picture each nozzle line is clear and horizontal with no gaps in the staggered pattern and no two nozzle lines of the same colour being on the same horizontal line:

FIGURE 3-5 GOOD NOZZLE TEST PRINT

TIP

It is possible to perform nozzle test prints directly on to the platen surface as long as it is cleaned off immediately afterwards. Nozzle prints done like this will allow the white output to be observed.

3.6.7 Examining a Nozzle Check Test Print

The Printer has the ability to do a nozzle test print which will indicate the integrity of the nozzle orifices. Blocked nozzles will cause the printer to produce poor quality output.

Load a sheet of clean paper for printing in accordance with ***Section 3.6.4 "Loading Media for Printing" p.49*** to do a nozzle test print and compare the results to the pictures below. White ink is NOT shown here.

This print shows missing nozzle line which indicates that there is either a blockage or an air pocket preventing the individual nozzle(s) from ejecting any ink:

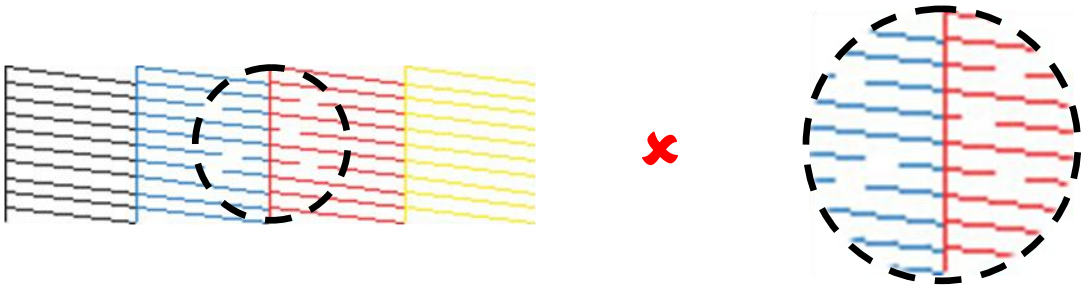


FIGURE 3-6 NOZZLE TEST PRINT - MISSING NOZZLES

This print shows a misplaced (deflected) nozzle line which indicates that there is either a partial nozzle blockage or debris on the print head facet preventing the nozzle from ejecting ink in a straight line:

FIGURE 3-7 NOZZLE TEST PRINT - MISPLACED NOZZLES

This print shows a line of missing nozzle prints which indicates that there is likely to be physical damage to the print head face, possibly by the print head face striking the platen surface or the media which is preventing the affected nozzles from ejecting any ink:

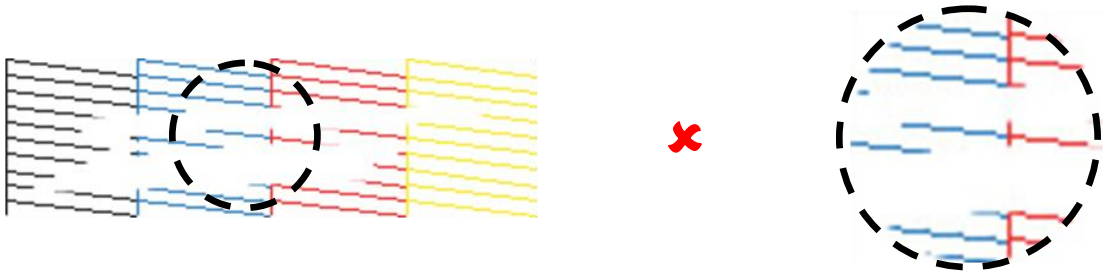


FIGURE 3-8 NOZZLE TEST PRINT - MISSING NOZZLE LINES

3.6.8 Bi-Directional (Bi-D) Adjustment

This menu option is used to align the head positions for Bi-Directional printing – that is, to align the print position of each nozzle between the left (CCW) direction print pass of the print head and the right (CW) direction print pass of the print head. This adjustment may be necessary if printed output, particularly fine lines, are blurry or appear as double lines.

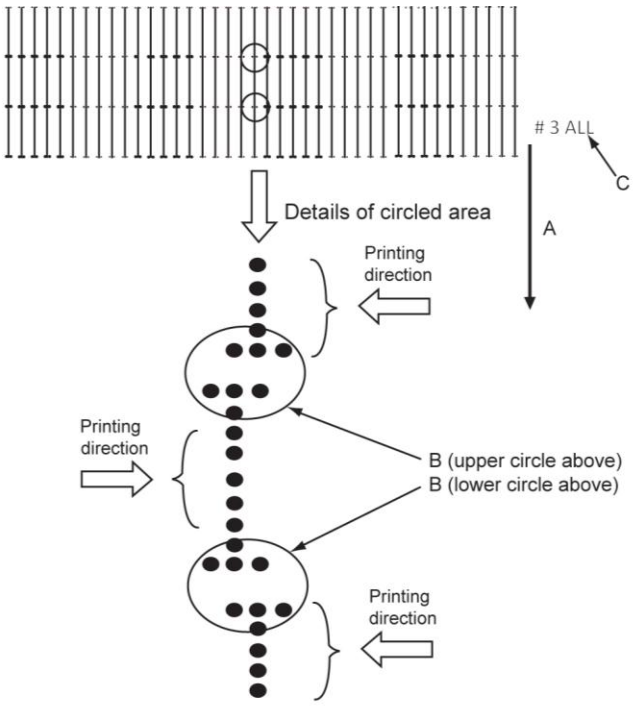
NOTE

Blurry prints or double lines may also result if the media height has not been set correctly. Ensure that the media height is correctly set ☞ *3.6.5 "Checking media height" p.51*

3.6.8.1 Overview of Bi-D Adjustment

To align the head position for Bi-Directional printing, there are two basic (repeatable) steps : 1. The adjustment process will first print out a Bi-D test print pattern, from which it will be necessary to identify the difference between the CW printing position and the CCW printing position. 2. Enter the revised parameter to move the CW and CCW printing positions. The Bi-D test print pattern will print again, and the parameter can be further revised if necessary.

Due to the print head characteristics, only one adjustment value is used for all nozzle rows. Therefore, adjust the parameter value so that the position of all the nozzle rows are aligned on average.

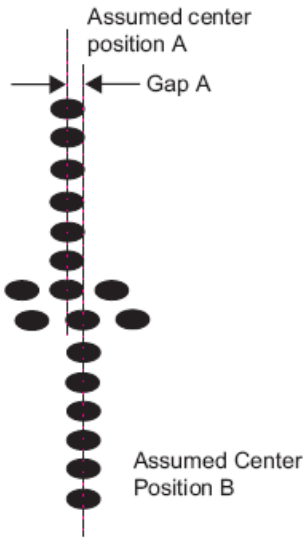


A. Media feed direction

B. Adjust the setting value so that the printed dots are aligned at this connecting point.

C. Indicates the adjustment pattern printed - # 3 = Bi-D High1, # 4 = Bi-D High2

3-9 PRINTED BI-D TEST PATTERN



Make an adjustment so that the size of the gap A is smaller than the half size of the dot.

3-10 DESIRED NOZZLE ALIGNMENT

3.6.8.2 Accessing the Bi-D Adjustment Menu

The Bi-D adjustment options can only be accessed through a "hidden" menu called the Self-Diagnosis menu.

CAUTION

Note that the Self-Diagnosis menu contains several menu options which are intended for use ONLY by a trained & authorized DTG technician. It is very important that you do not execute any other of the menu options available in the Self-Diagnosis menu – incorrect settings or the execution of some menu items may result in damage to your printer.

3.6.8.3 Accessing the Self-Diagnosis Menu

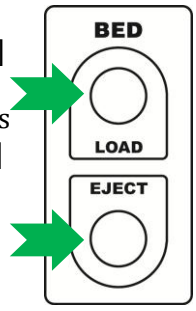
To access the Adjustment menu , select the self-diagnosis menu on the operation panel, and simultaneously put the bed operation into diagnostic mode.

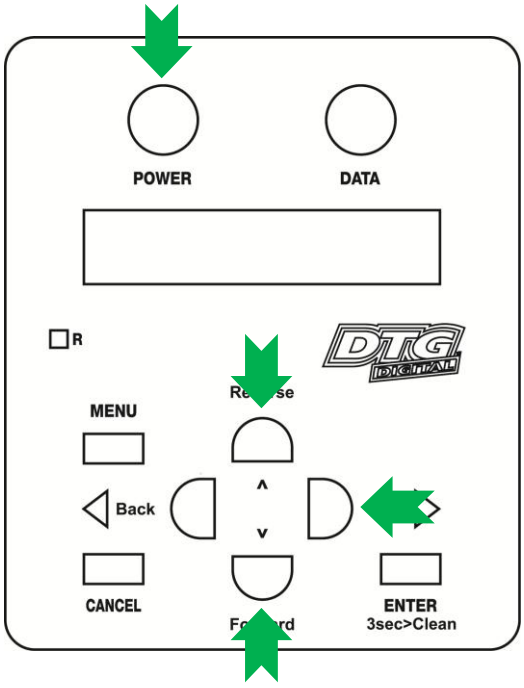
The self-diagnosis menu is completely independent of the normal operation mode and self-diagnosis display mode. To call up the self-diagnosis menu, follow the steps below.

1. If the system is in the operation mode or the self-diagnosis menu mode, press [Power] key to turn the printer off.

2. While holding down [Reverse] key, [Forward] key and [Next >] key in the operation panel AND the [LOAD] and [EJECT] buttons simultaneously, press [POWER] key.

   The system will enter the self-diagnosis mode and display the self-diagnosis menu.





NOTE

Be sure to continue to depress the [Reverse] key, [Forward] key and [Next >] key in the operation panel until the printer emits a series of "beeps".

The system will enter the self-diagnosis mode and display the self-diagnosis menu:

- After a short delay the screen will display `Initializing`
- Shortly thereafter, the printer will emit a series of "beeps"
- After another short delay, the screen will display `Check : Test` – this is the first menu item in the Self-Diagnosis Menu

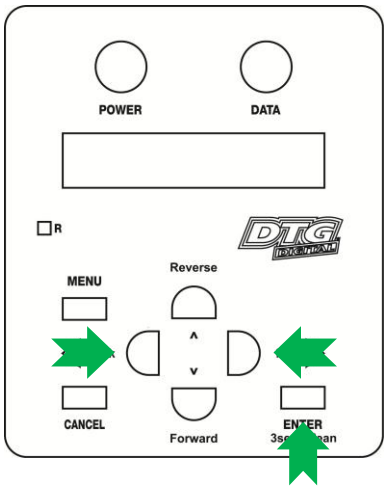
3.6.8.4 Navigating to the Adjustment Menu

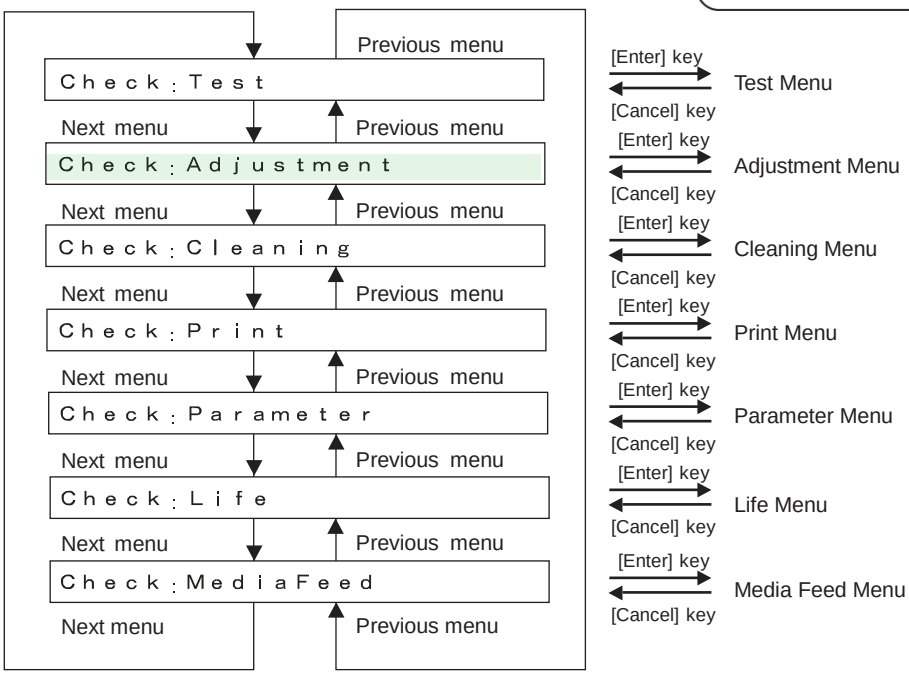
Follow the operation flow shown below to operate the self-diagnosis Menu and access the Adjustment Menu.

1. Press [Next] key or [Back] key in the operation panel to scroll through the menu. Then, press [Enter] key to confirm the menu option displayed.

   The button presses required to enter the Adjustment Menu from the start of the self-diagnosis menu are:

   [Next] [Enter]





2. When the [Enter] key is pressed to confirm / select the Check:Adjustment menu option, the Print Head will release from the Capping Station and make small movements & some noise for 15-20 seconds or so before settling back into the Capping Station. This is normal. Then the first item of the Adjustment Menu will display – Adj:CheckScew.

3.6.8.5 Navigating to the Bi-D Adjustment options

The available Bi-Directional Adjustment items are shown in the tables below.

Adjustment Item	*Contents*
Bi-D Low 1	Do not use
Bi-D Low 2	Do not use
Bi-D High 1	Bi-D adjustment for high head height, PG 2 value, using 3-peak waveform
Bi-D High 2	Bi-D adjustment for high head height, PG 2 value, using 6-peak waveform

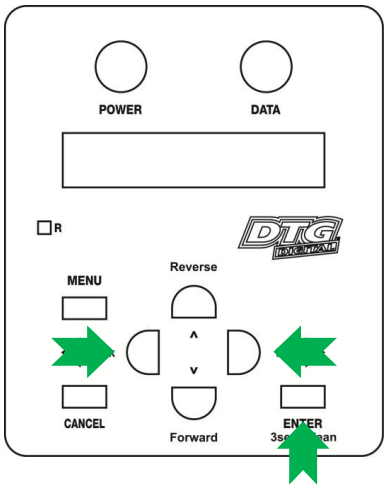
TABLE 3-3 BI-D ITEMS

Follow the operation flow shown below to operate the Adjustment Menu and access the Bi-Directional Adjustment options.

1. Press [Next] key or [Back] key in the operation panel to scroll through the menu. Then, press [Enter] key to confirm the menu option displayed.

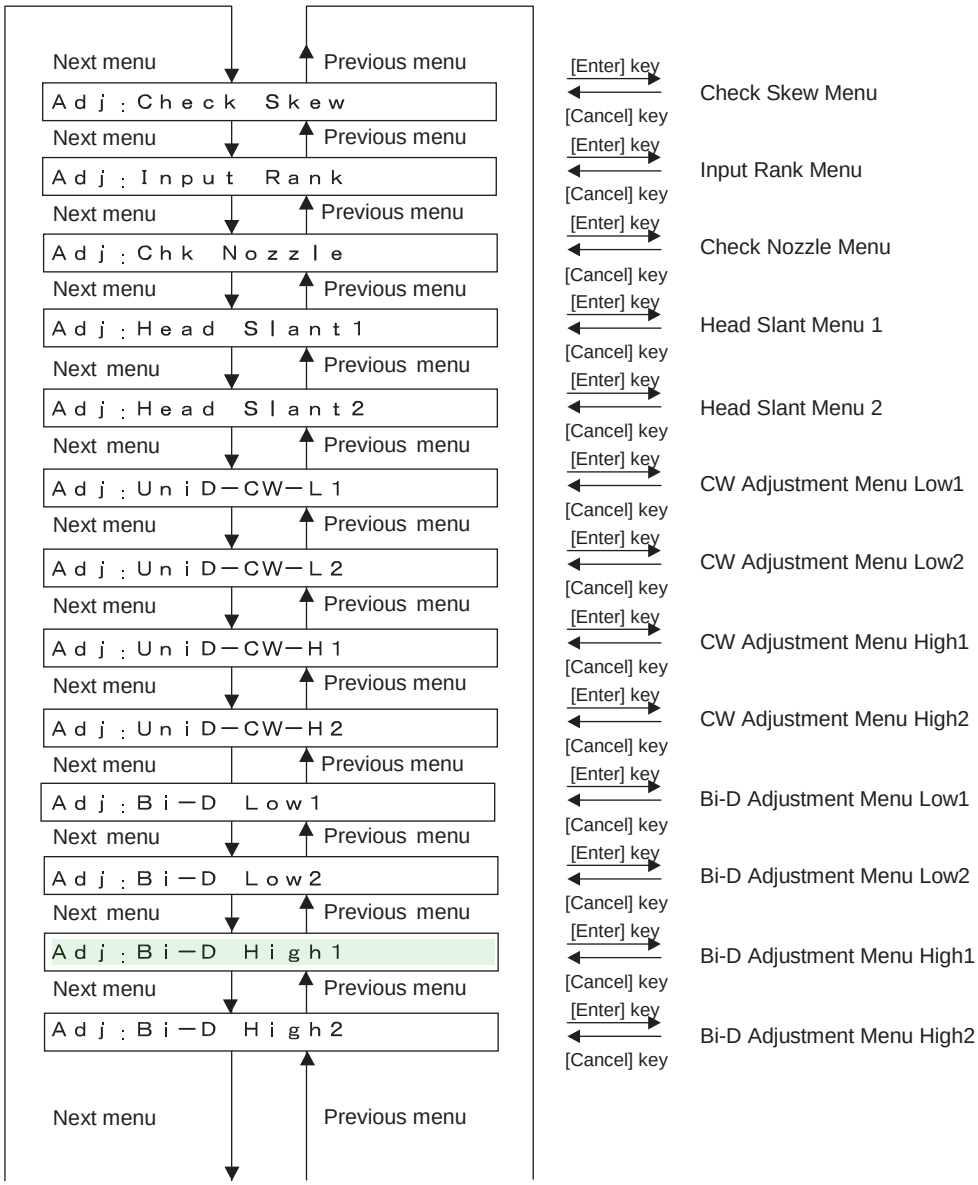
   The button presses required to select the first Bi-Directional option (Bi-D High1) from the start of the Adjustment menu are:

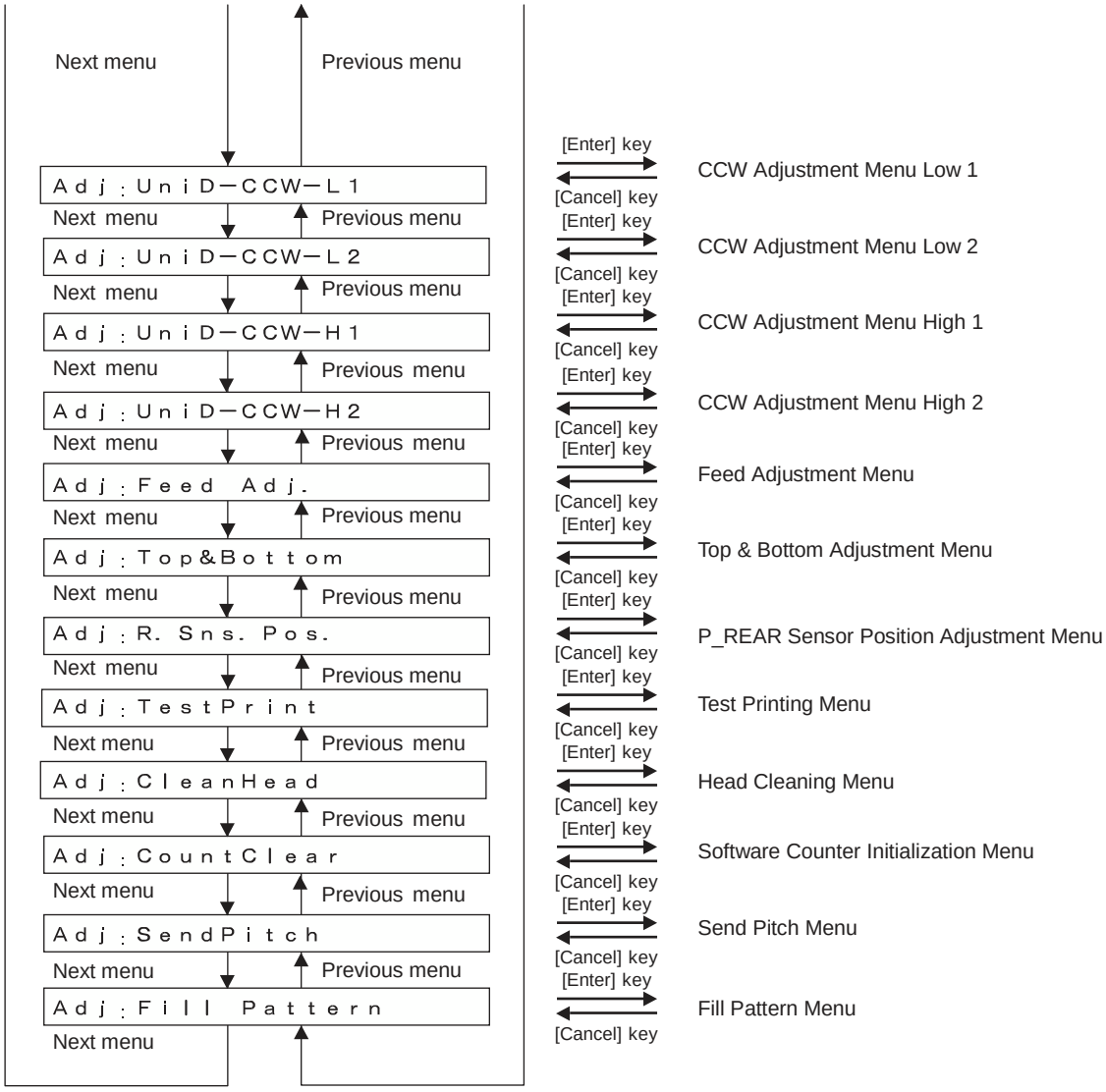
   [Next](x 11) [Enter]



NOTE

If the [Cancel] key, [Forward] or [Reverse] key is pressed after changing a setting, without pressing [Enter] key, that setting will not be saved.


Next menu
Previous menu
Adj:Check Skew
Next menu
Previous menu
Adj:Input Rank
Next menu
Previous menu
Adj:Chk Nozzle
Next menu
Previous menu
Adj:Head Slant1
Next menu
Previous menu
Adj:Head Slant2
Next menu
Previous menu
Adj:UniD-CW-L1
Next menu
Previous menu
Adj:UniD-CW-L2
Next menu
Previous menu
Adj:UniD-CW-H1
Next menu
Previous menu
Adj:UniD-CW-H2
Next menu
Previous menu
Adj:Bi-D Low1
Next menu
Previous menu
Adj:Bi-D Low2
Next menu
Previous menu
Adj:Bi-D High1
Next menu
Previous menu
Adj:Bi-D High2
Next menu
Previous menu
[Enter] key
[Cancel] key
Check Skew Menu
[Enter] key
[Cancel] key
Input Rank Menu
[Enter] key
[Cancel] key
Check Nozzle Menu
[Enter] key
[Cancel] key
Head Slant Menu 1
[Enter] key
[Cancel] key
Head Slant Menu 2
[Enter] key
[Cancel] key
CW Adjustment Menu Low1
[Enter] key
[Cancel] key
CW Adjustment Menu Low2
[Enter] key
[Cancel] key
CW Adjustment Menu High1
[Enter] key
[Cancel] key
CW Adjustment Menu High2
[Enter] key
[Cancel] key
Bi-D Adjustment Menu Low1
[Enter] key
[Cancel] key
Bi-D Adjustment Menu Low2
[Enter] key
[Cancel] key
Bi-D Adjustment Menu High1
[Enter] key
[Cancel] key
Bi-D Adjustment Menu High2


Next menu
Previous menu
Adj:UniD-CCW-L1
Adj:UniD-CCW-L2
Adj:UniD-CCW-H1
Adj:UniD-CCW-H2
Adj:Feed Adj.
Adj:Top&Bottom
Adj:R. Sns. Pos.
Adj:TestPrint
Adj:CleanHead
Adj:CountClear
Adj:SendPitch
Adj:Fill Pattern
[Enter] key
[Cancel] key
CCW Adjustment Menu Low 1
CCW Adjustment Menu Low 2
CCW Adjustment Menu High 1
CCW Adjustment Menu High 2
Feed Adjustment Menu
Top & Bottom Adjustment Menu
P_REAR Sensor Position Adjustment Menu
Test Printing Menu
Head Cleaning Menu
Software Counter Initialization Menu
Send Pitch Menu
Fill Pattern Menu

3.6.8.6 Making a Bi-Directional adjustment

The actual procedure is as follows.

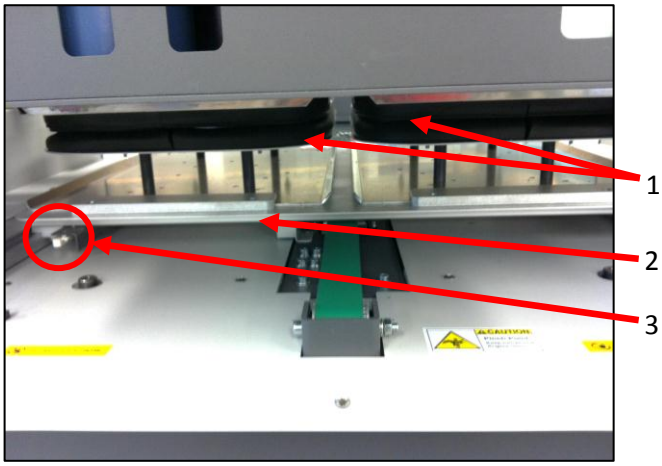
1. Load a sheet of clean paper for printing in accordance with ***Section 3.6.4 "Loading Media for Printing" p.49***
2. Push the platen tray forwards so that about half of the platen is inside the printer. If the platen is too high the platen LED will turn red and the platen will lower its self. If the platen LED is yellow the printer is in platen gap lock mode, press both the UP and DOWN buttons together to turn the lock mode off. The platen LED should go green to indicate all is well and the optimum print head gap is now set.
3. To set the correct height press and hold the UP button, the platen will begin to rise until the internal safety beam detects that the platen height is correct. The platen LED will go red and the platen will stop moving, release the UP button and the LED will turn green indicating that the platen height is now set. Refer to ***Section 3.6.5 "Checking media height" p.51*** for further information.
4. Press both the UP and DOWN buttons together to turn the lock mode on.
5. Press the EJECT button to ensure that the printer is not in “load mode”

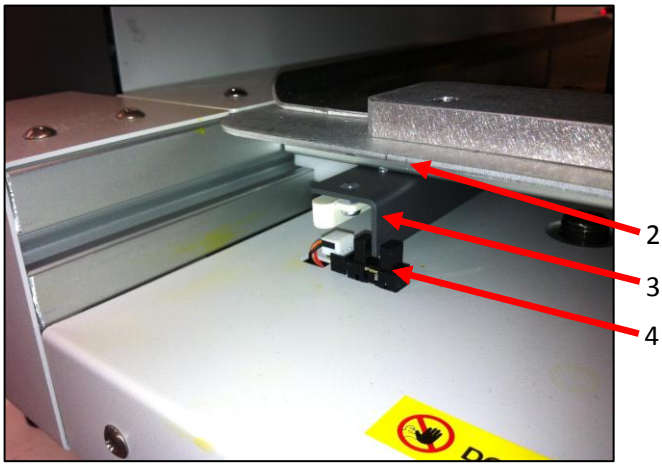
NOTE

When the printer bed is put into diagnostic mode as is done in preparation for the Bi-Directional adjustment (by pressing & holding LOAD and EJECT buttons during power up in printer diagnostic mode), the normal operation of the LOAD and EJECT buttons are suspended. That is, these buttons will not control the movement of the Media Tray.

They do, however, set the status of the printer: If the LOAD button is pressed, the Load/Eject status light will change to green, and the printer will “think” that media has been loaded. If the EJECT button is pressed, the light will display red, and the printer will “think” that media is not loaded.

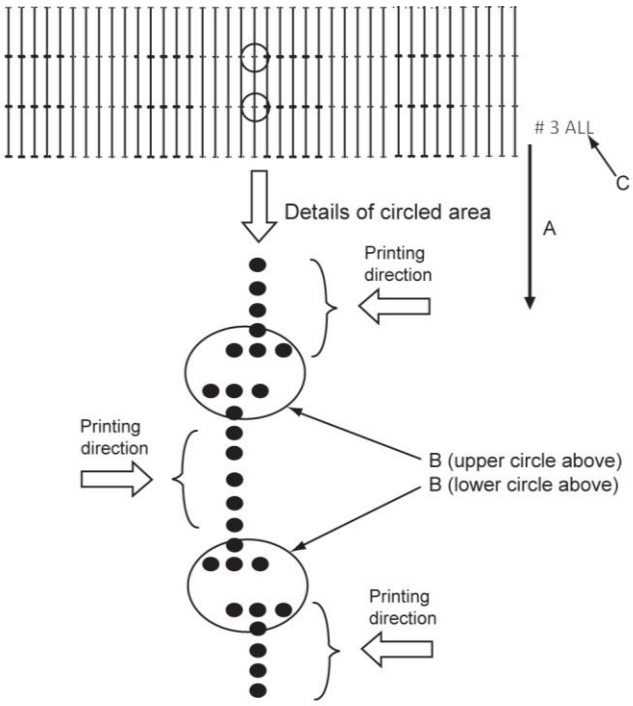
6. From the rear of the printer, slowly pull the Media Tray towards the rear of the printer, until the Media Sensor is triggered by the interrupter located on the base of the Media Tray as shown here:





No.	Part name
1	Platens
2	Media Tray
3	Interrupter
4	Media Sensor

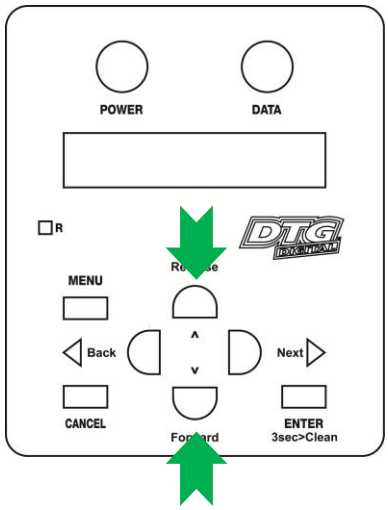
7. Press the LOAD button to set the printer to “load mode”. The Load/Eject status light should turn green.
8. Follow the menu selection described above in *Section 3.6.8.2 "Accessing the Bi-D Adjustment Menu" p.57* to access the Bi-D High1 utility.
9. When `Bi-D High1` is displayed, press the [Enter] key.
10. `Enter Print Start` will be displayed – press the [Enter] key again.
11. `Adjustment Print` will display on the LCD screen, and the test pattern will be printed.
12. The platen will not eject after the test print has completed, so manually pull the platen out to the front of the printer far enough that you can examine the test print pattern.



(The following shows a case for Bi-D High 1)

A. Media feed direction
B. Adjust the setting value so that the printed dots are aligned at this connecting point.
C. Indicates the adjustment pattern printed - # 3 = Bi-D High1, # 4 = Bi-D High2

13. In the above example, the L-R (left to right) print direction dots have printed to the left of the R-L (right to left) print direction dots.
14. The LCD will display `#3 BiD,PG2: XXX` where XXX is a value between -400 and +400, this is the current parameter for the Bi-D adjustment; the value that has produced the test print just printed.
15. To move the position in which the L-R print direction dots print in relation to the R-L print direction dots, use the [Forward] and [Reverse] keys to increase or decrease the parameter value.



NOTE

Changing the aparameter value by one unit will adjust the position of the dots by less than 1/10th of a millimeter (1/2880 inch).

Increasing the parameter value will shift the L-R print direction dots to the right (relative to the R-L print direction dots). Decreasing the parameter value will shift the L-R print direction dots to the left (relative to the R-L print direction dots).

16. After adjusting the parameter value, press the [Enter] key to set the new value, and to start another Bi-D test pattern print (note that the printer will automatically reset the position of the media tray for printing, it does not need to be manually re-positioned).

17. Repeat steps 12-16 above as necessary until, on average (across the page), the position of the L-R print direction dots are aligned with the R-L print direction dots. Load new paper as necessary.

NOTE

If it is necessary to load new paper, press the EJECT button to set the printer to a "media unloaded" mode, set the new paper and manually re-position the media tray as described in steps 6 & 7 above.

NOTE

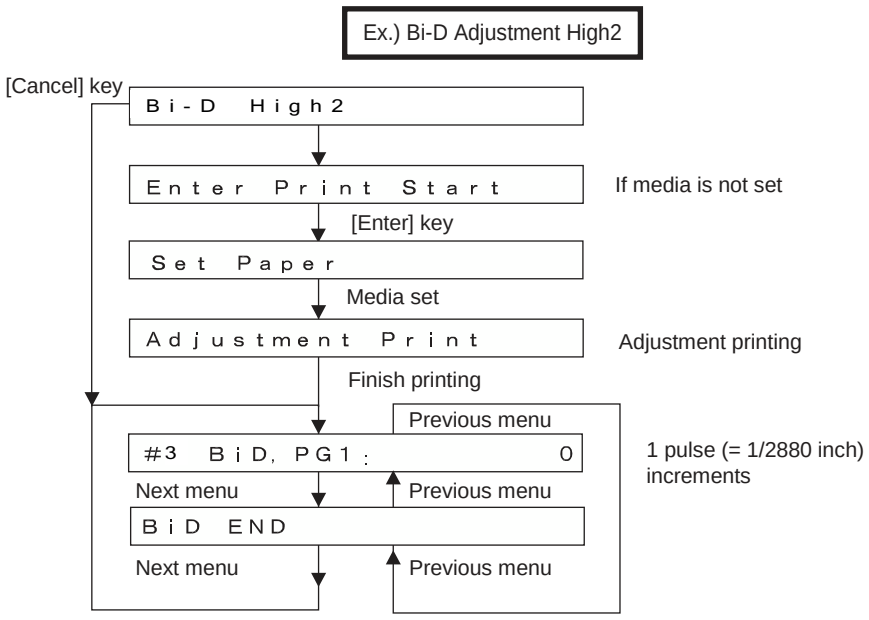
If the [Enter] key is pressed without changing the parameter value, `Bi-D End` will be displayed (it is assumed that this parameter value is accepted as the final parameter adjustment). Press the [Back] key to change the parameter value if required.

Press the [Cancel] key to move one level up the Self-Diagnosis menu structure.

Power the printer off to exit the Self-Diagnosis mode.

18. Repeat the above steps to adjust the Bi-D High2 value (Select `Bi-D High2` from the Adjustment Menu).

The below diagram gives an overview of the menu flow within the Bi-D adjustment utility.



3.6.9 Installing & Using Printer Drivers

A printer driver is a piece of software that converts the data to be printed to the form specific to a printer, and it is usually supplied with a new printing device.

In the case of the DTG M2, you will have been supplied with a RIP software which also converts the data from an image that you wish to print into a form that the printer will understand. In most cases you will not have need to use the native driver for the printer as the RIP will handle the printing process.

There may, however, be occasions where you have need to by-pass the RIP software for test printing purposes. The Driver installation instructions are provided here for that purpose.

3.6.9.1 Installing the Printer Driver (for network connection)

1. The printer should be connected to the network before installing the printer driver ☞ ***3.5.3.1 "Connecting Ethernet (network) interface cable" p.32***
2. Switch the printer on in accordance with the instructions in ***Section 3.5.1 "Switching the Printer ON" p.29***
3. Turn on your PC.
4. Ensure that your PC boots up correctly, then insert the printer driver CD into the CD drive on your PC.
   - The installer should start.

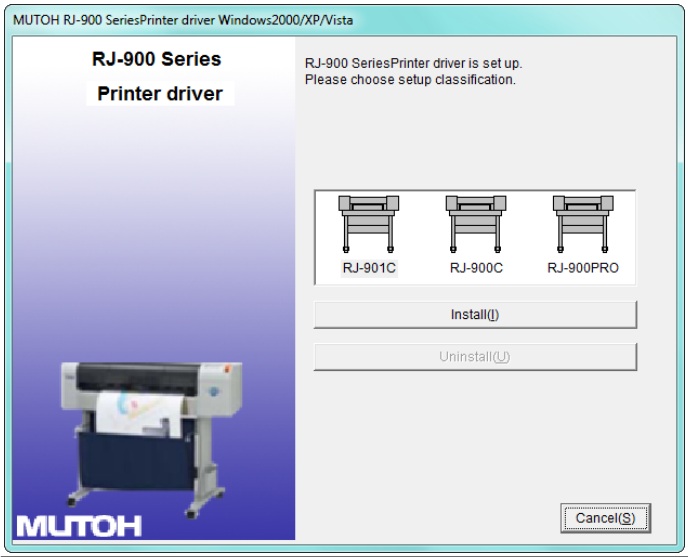
NOTE

Depending you're your PC settings, the installer may not automatically start. If the installation does not automatically start, execute "Setup.exe" from the CD.

5. Select the model (RJ-901C), and click "Install"

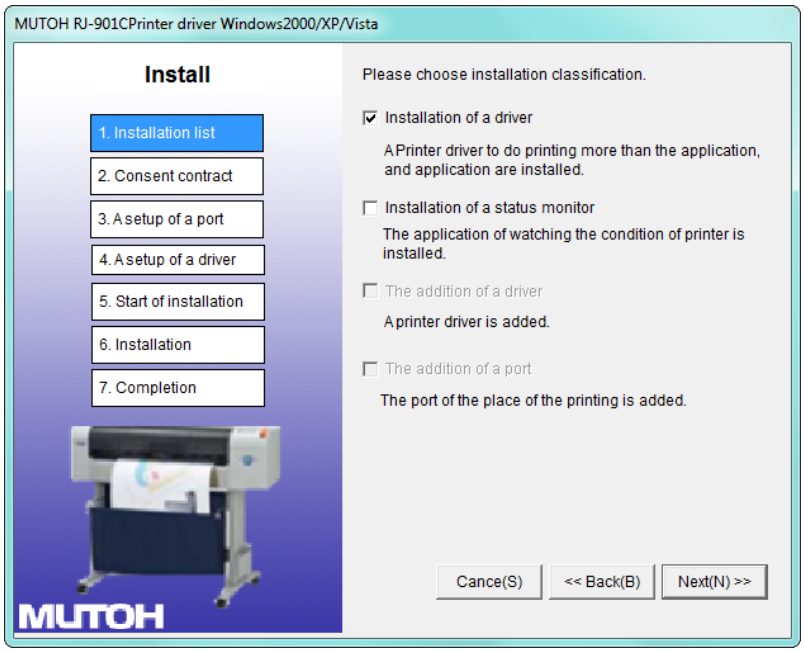
NOTE

If you click "Cancel", the printer driver installation will be cancelled



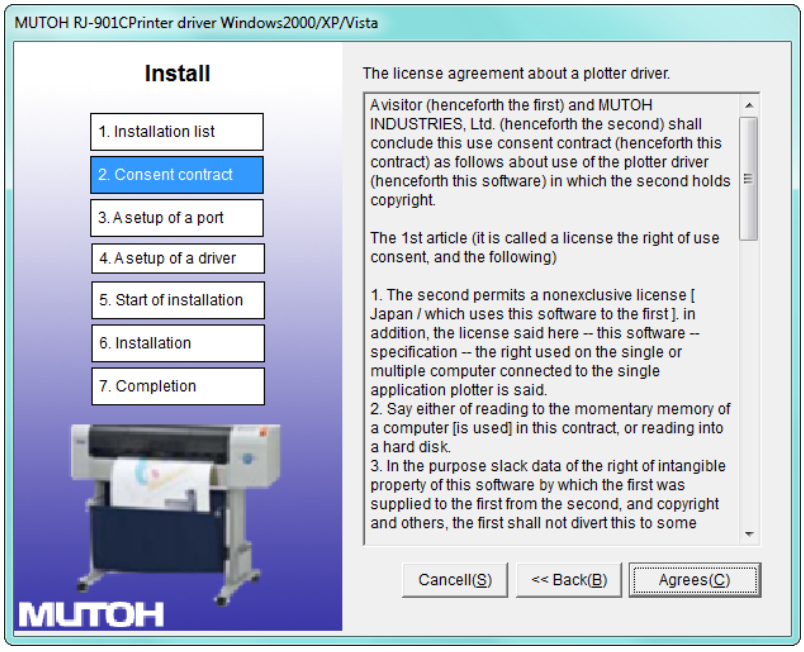
- The display will move to the next screen

6. Click the “installation of a driver” check box and click “Next”.



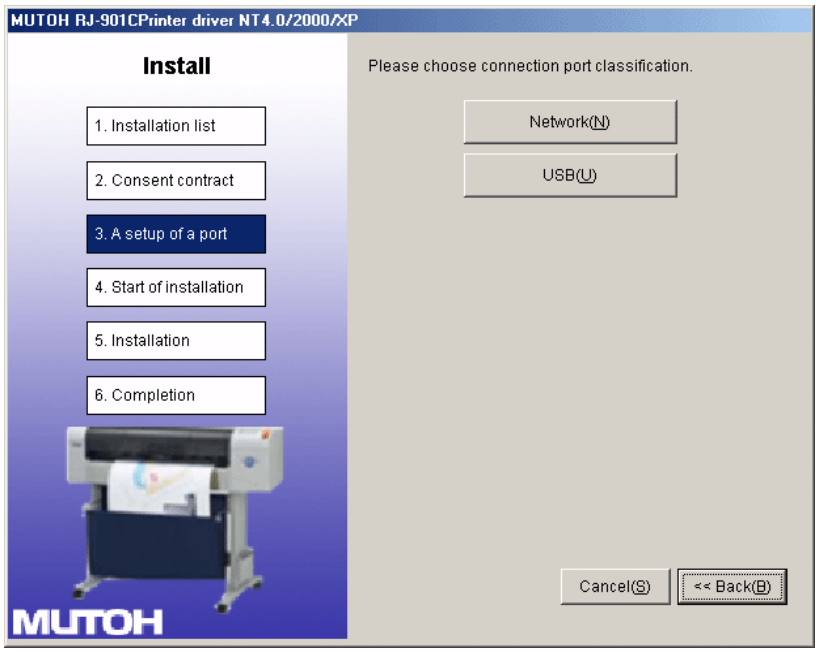
- The display will move to the next screen

7. The license agreement for the driver software will display.
   a. If you agree to the written contents, click “Agree”
      - The display will move to the next screen
   b. If you do not agree to the written contents, click “Cancel”
      - The installation of the driver will be cancelled



- The display will move to the next screen

8. Click “Network”



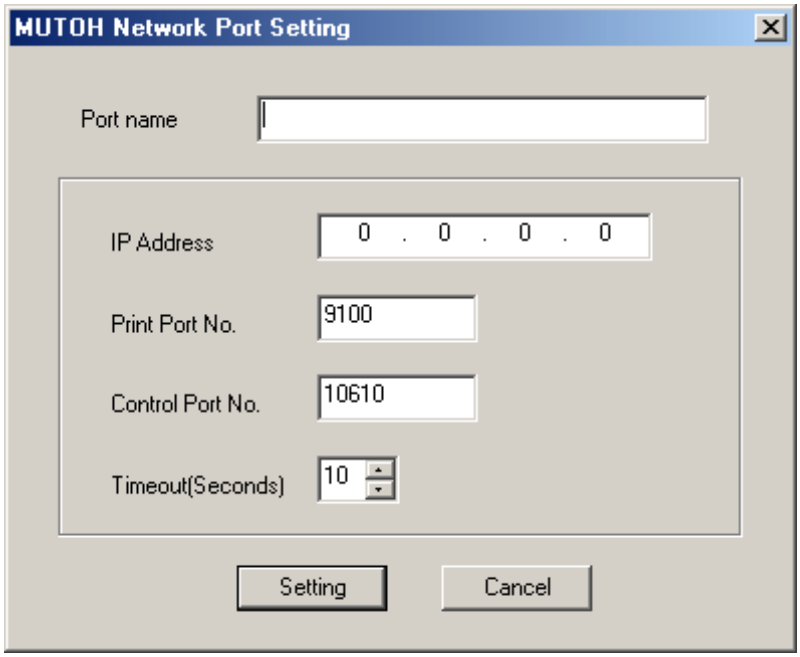
a. If this is the first installation of the printer driver on your PC, proceed to step 9

b. If the printer driver has previously been installed, proceed to step 10

9. Set the Port name and IP Address and click “Setting”

NOTE

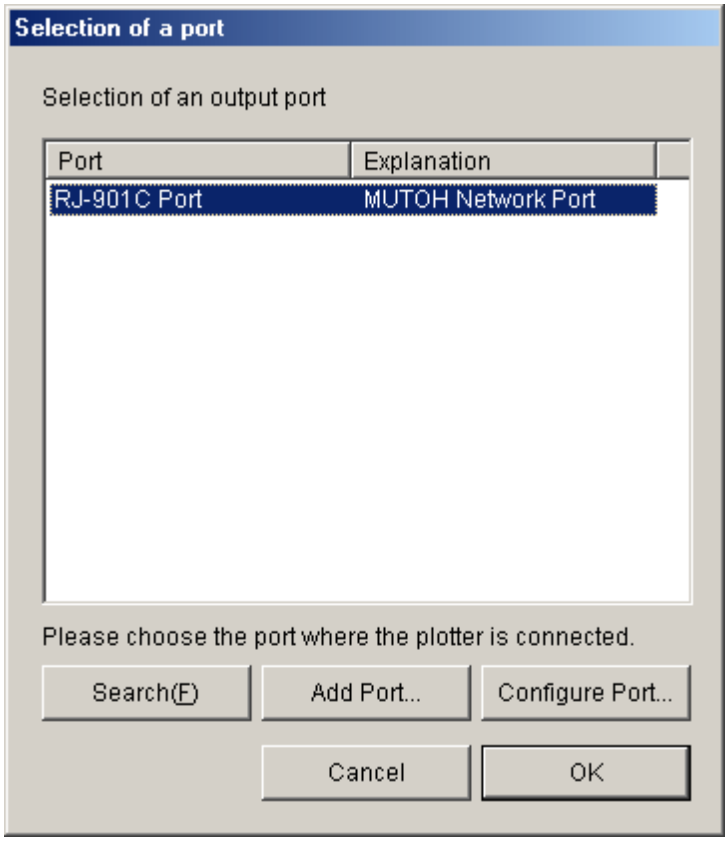
Refer to “Network setup menu” for the IP address setting for the printer.



- Proceed to step 11.

10. If the driver has previously been installed to the computer, the output ports that have already been configured are displayed in the output port list.

a. When using the previously configured port, select the output port from the output port list and click “OK”

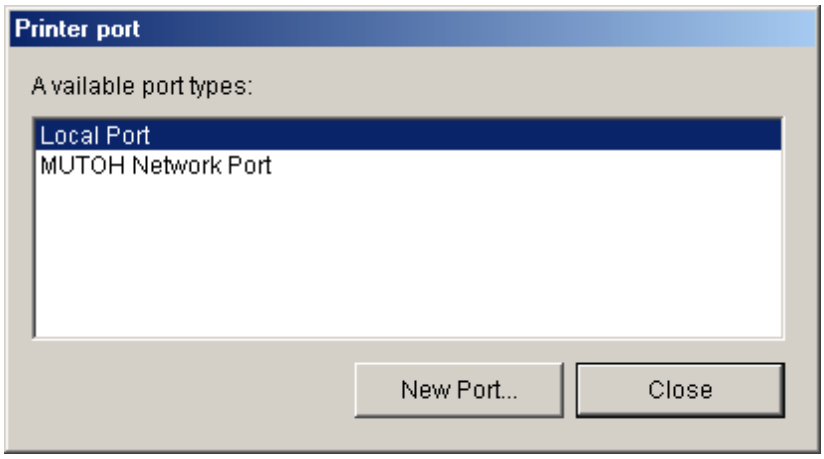


- Proceed to Step 11.

b. When adding a new port

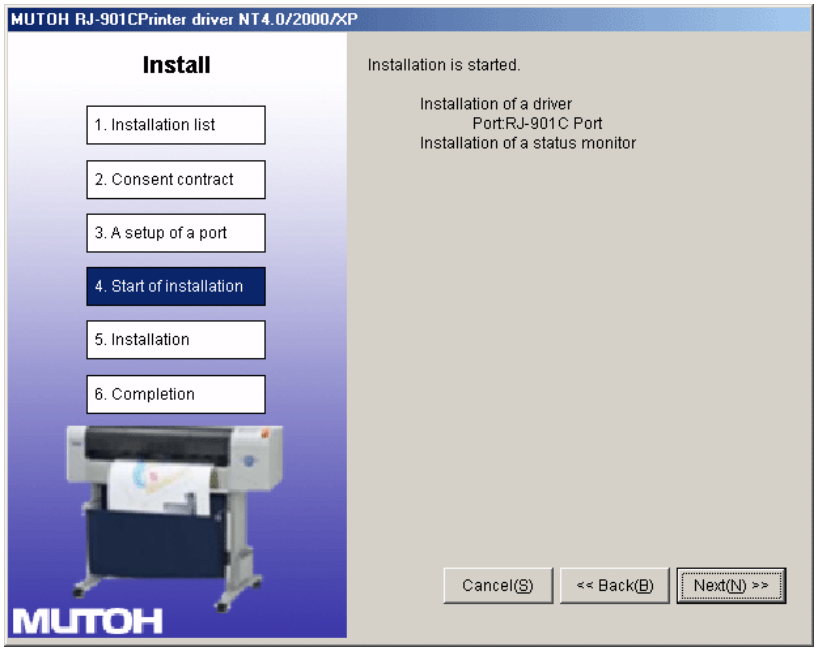
i. Click “Add Port”

ii. Select “Mutoh Network Port” and click “New Port”

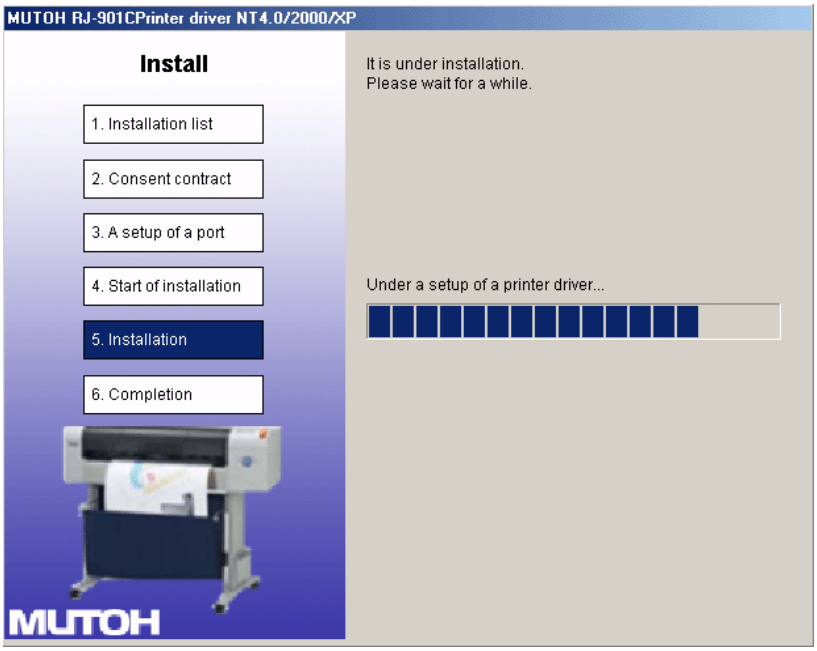


- Refer to Step 9.

11. The driver and selected ports to be installed are displayed. Check the contents on the display, and click “Next”.

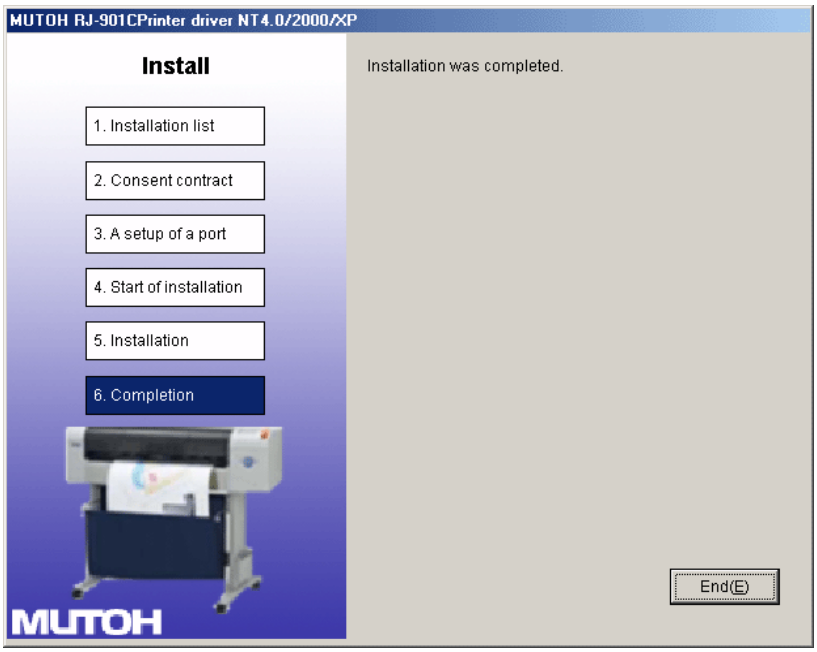


- The driver will start installing.



- When the printer driver finishes installing, the next screen is displayed.

12. Click “End”.



- The printer driver installation is complete.

3.6.9.2 Installing the Printer Driver (for USB connection)

1. Turn on your PC.
2. Ensure that your PC boots up correctly, then insert the printer driver CD into the CD drive on your PC.
   - The installer should start.

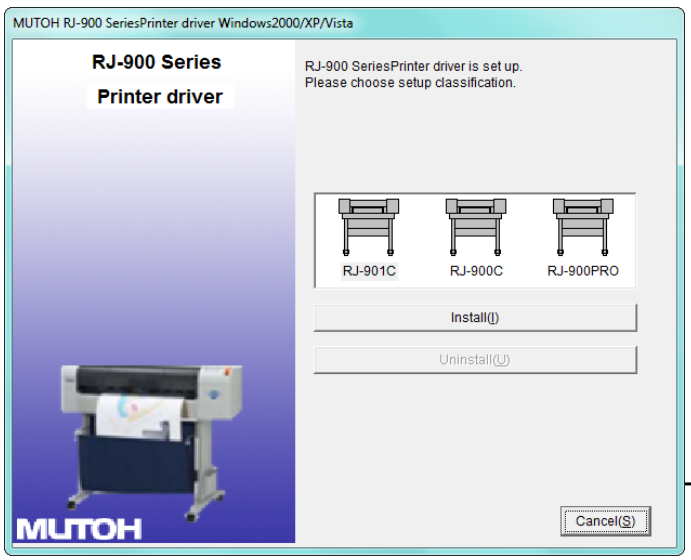
NOTE

Depending you’re your PC settings, the installer may not automatically start. If the installation does not automatically start, execute “Setup.exe” from the CD.

3. Select the model (RJ-901C), and click “Install”

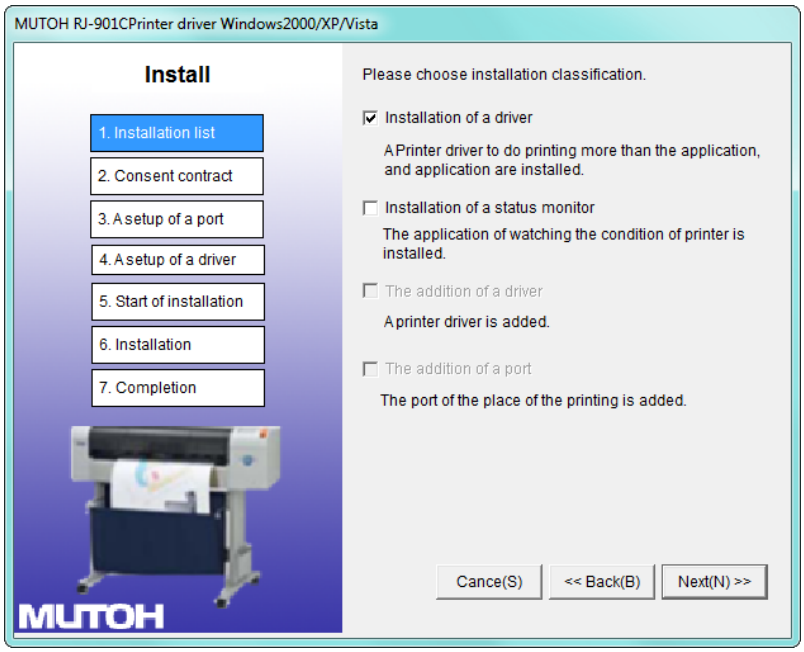
NOTE

If you click “Cancel”, the printer driver installation will be cancelled



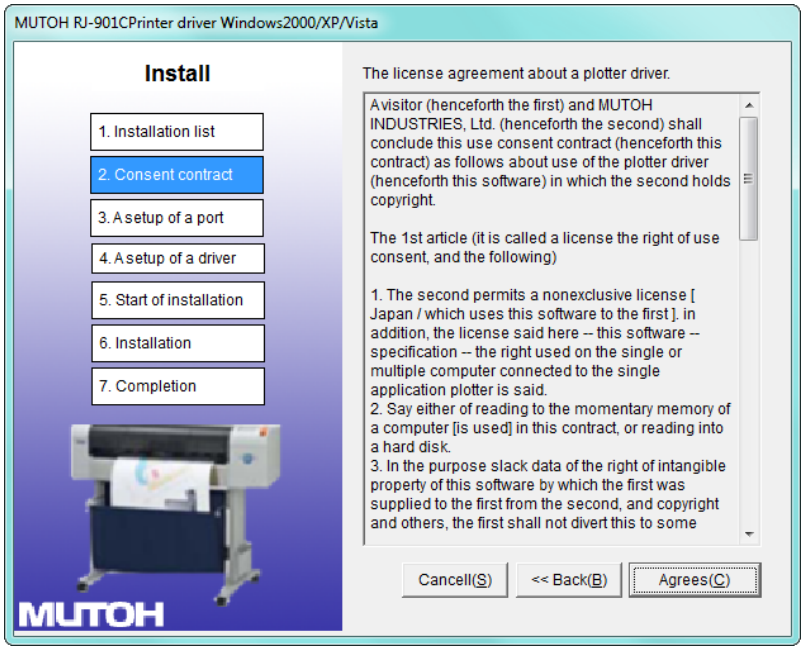
- The display will move to the next screen

4. Click the “installation of a driver” check box and click “Next”.



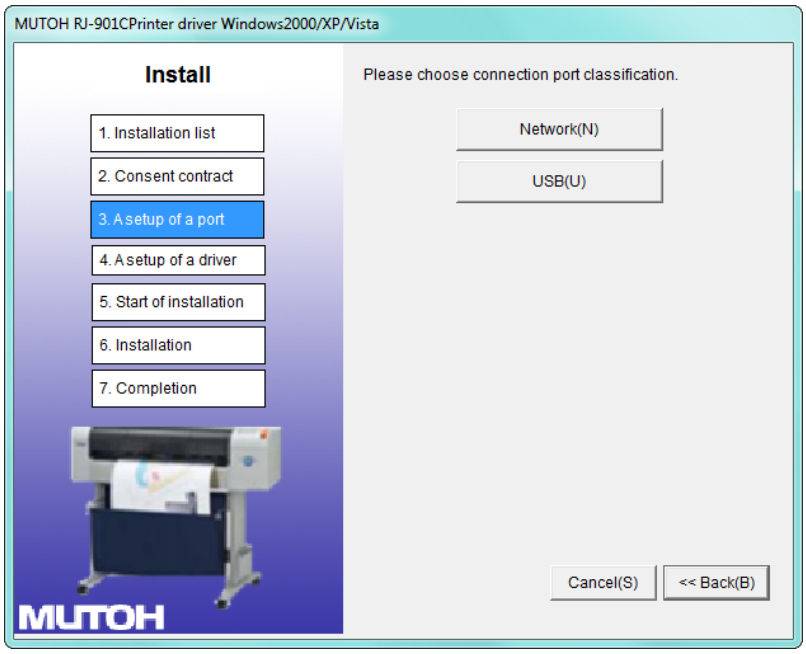
- The display will move to the next screen

5. The license agreement for the driver software will display.
   c. If you agree to the written contents, click “Agree”
      - The display will move to the next screen
   d. If you do not agree to the written contents, click “Cancel”
      - The installation of the driver will be cancelled



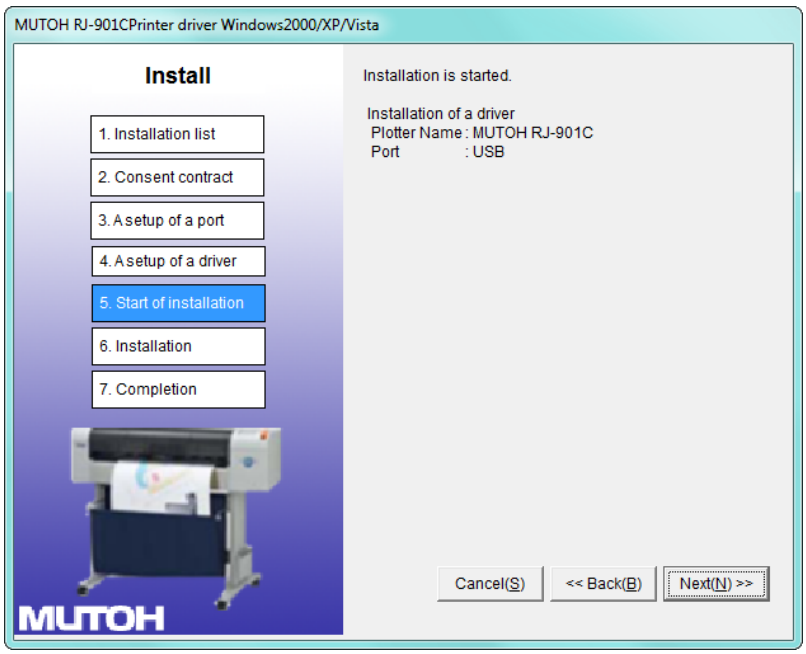
- The display moves to the next screen.

6. Click “USB”

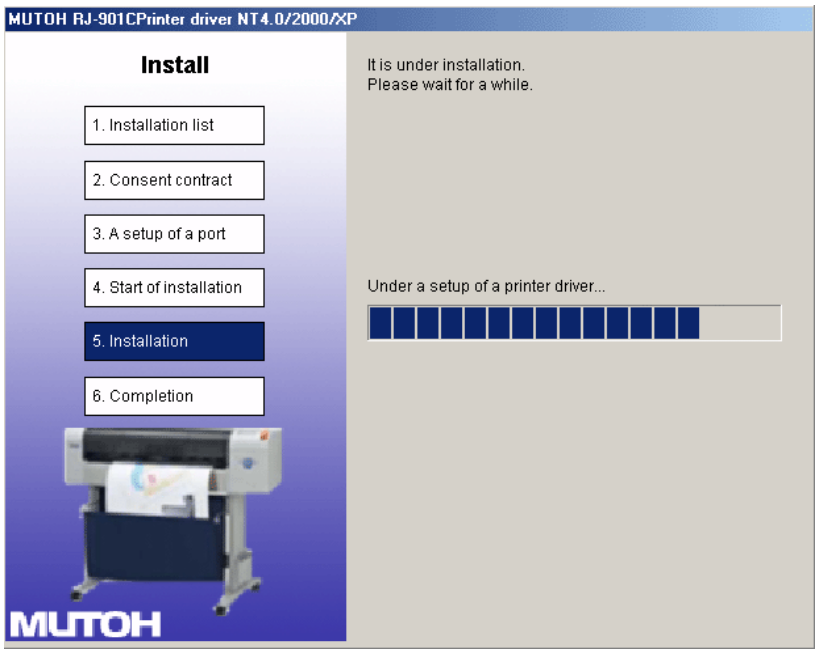


- The display moves to the next screen.

7. The driver and the ports that are to be installed are displayed. Check the contents on the display, and click “Next”.

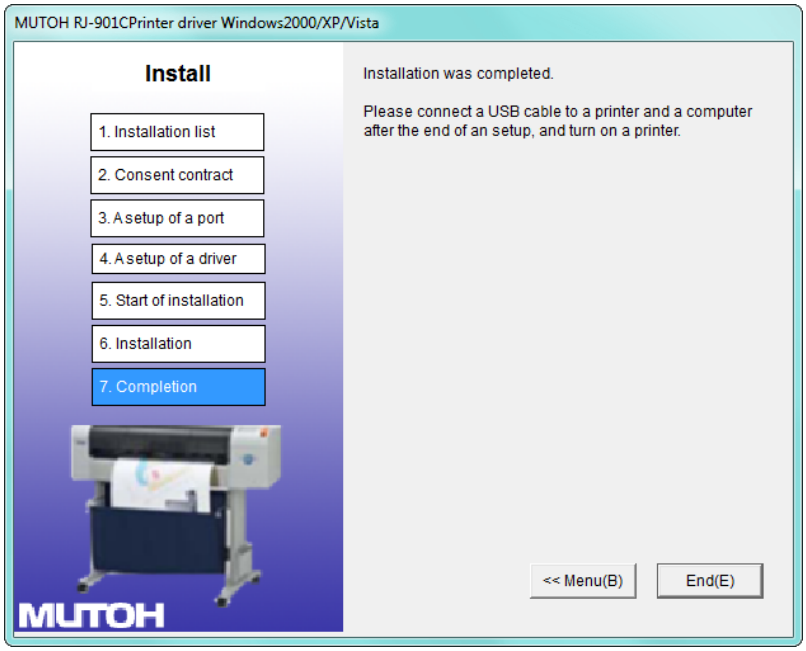


- The driver starts installing.



- When the installation of the driver has completed, the next screen is displayed.

8. Click “End”



- The printer driver installation is completed.

9. Turn ON the power to the printer ☞ *3.5.1 "Switching the Printer ON" p.29*
10. Connect the printer to your PC with the USB interface cable ☞ *3.5.3 "Connecting the Printer to the PC" p.32* .
11. Insert the printer driver CD into the CD drive of your PC. The “Found New Hardware” wizard will start.
12. Click “Next”

- The display moves to the next screen.

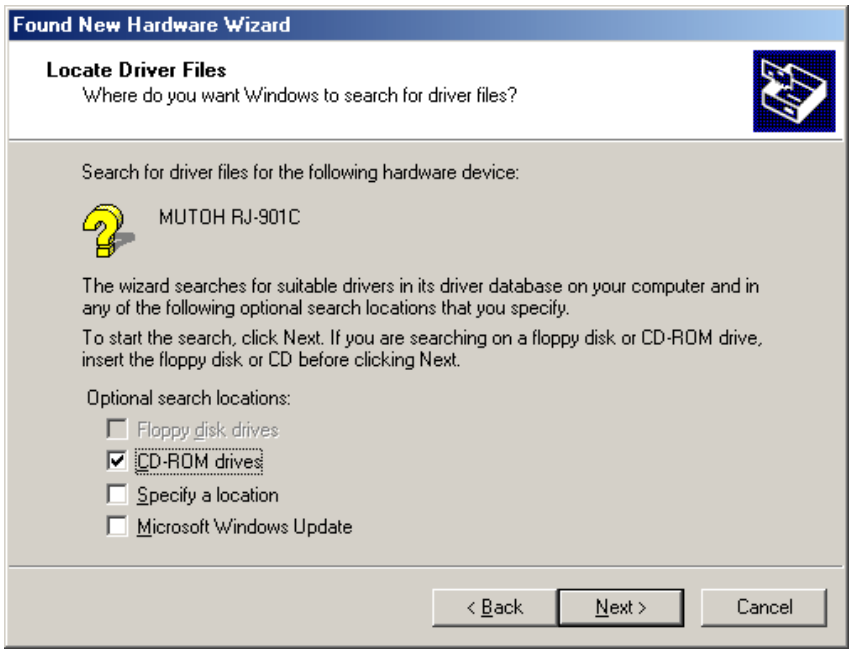
13. Select “Search for a suitable driver for my device (recommended)”, and click “Next”.

NOTE

Install the printer driver as shown in the procedure, even if the display shows “Unknown device”.

- The display moves to the next screen.

14. Click the check box of “CD-ROM drive” and click “Next”.

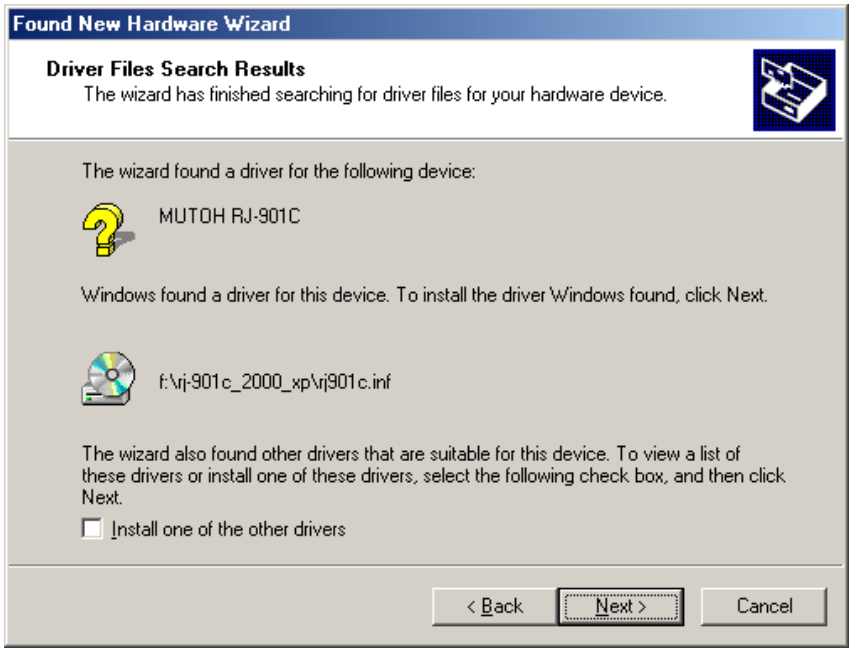


- The display moves to the next screen

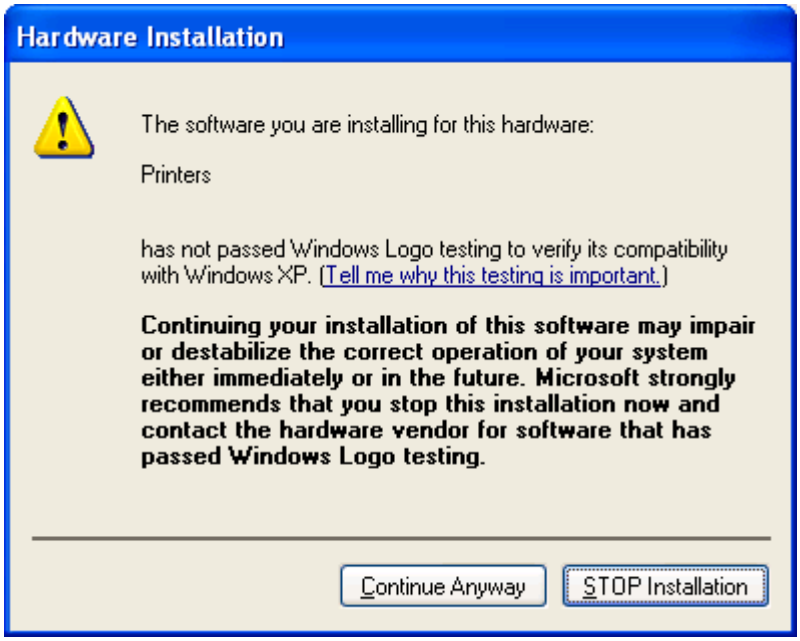
15. The installer will locate the correct driver file for the model printer & operating system.

NOTE

If the correct driver file cannot be found, click the check box of “Install another driver” and click “Next”.



- If the message “has not passed Windows Logo testing” is displayed during installation, click “Continue Anyway”, the installation will continue.



16. Click “Finish” – the printer driver installation is now complete.

4.Printing on Textiles with the DTG M2™

4.1 Introduction

Printing on textile items with the DTG M2™ is a very simple process involving five easy steps:

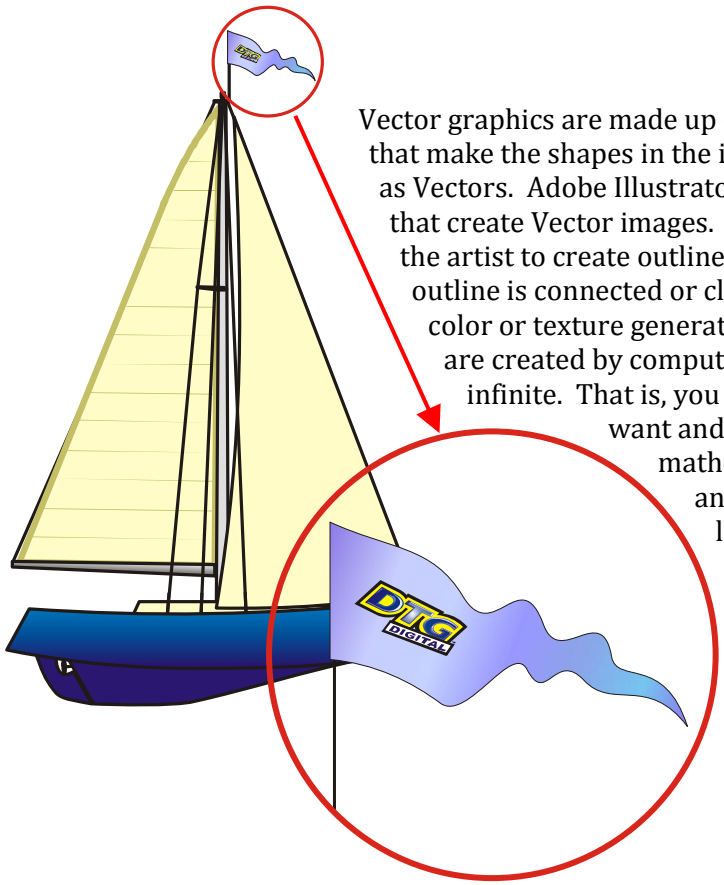
1. Create an image in any of your graphics programs
2. Prepare a T-shirt or other textile item for printing
3. Load a T-shirt or other textile item onto the printer
4. Set-up your image for printing with the RIP program
5. Press the Print button.

Once you are comfortable with the basic operations of your DTG M2™, you are ready to proceed!

4.2 Prepare Your Image

Your printed garment will only ever be as good as the artwork from which it is printed, regardless of the RIP that is used to send the printing information to the printer. It is essential that you have a basic understanding of image or graphic types in order to understand your artwork:

(1) Vectors



Vector graphics are made up of mathematical outlines and curves that make the shapes in the image. They are commonly referred to as Vectors. Adobe Illustrator and Corel Draw are two programs that create Vector images. These programs have tools that allow the artist to create outlines of any shape they wish. Once an outline is connected or closed the shape can be filled with any color or texture generated by the software. Since these shapes are created by computer generated outlines the resolution is infinite. That is, you can enlarge the image as much as you want and because the image is made up of mathematical shapes & curves, these shapes and curves will enlarge infinitely without losing resolution, as will any "fill" to those shapes or curves.

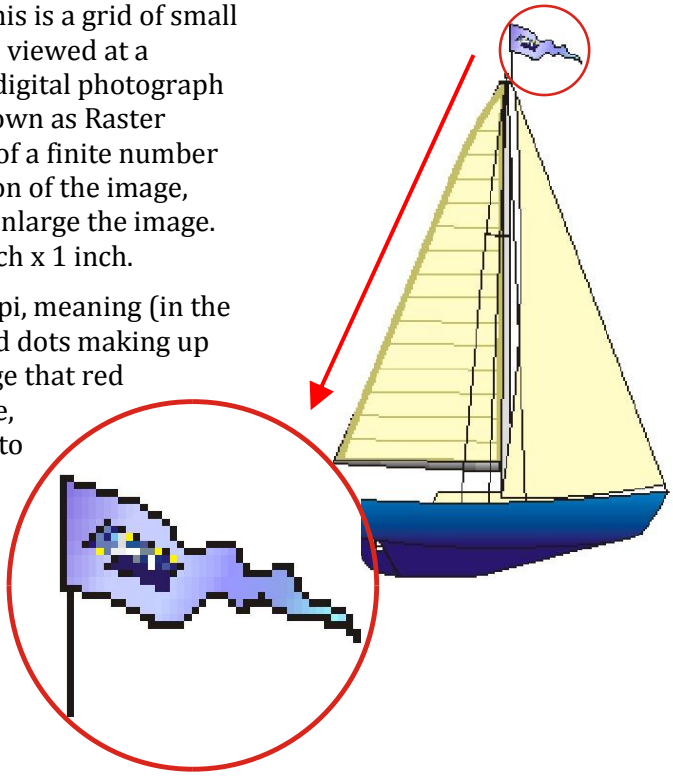
The file format for Adobe Illustrator is (.ai) and for Corel Draw is (.cdr).

(2) Bitmaps

Bitmaps are images made up of pixels. This is a grid of small squares of appropriate colours that when viewed at a distance make a graphic image such as a digital photograph or digital art. Bitmaps are technically known as Raster Images. Since these images are made up of a finite number of bits generated at the time of the creation of the image, there are limits as to how much you can enlarge the image. Imagine a small solid red square, say 1 inch x 1 inch.

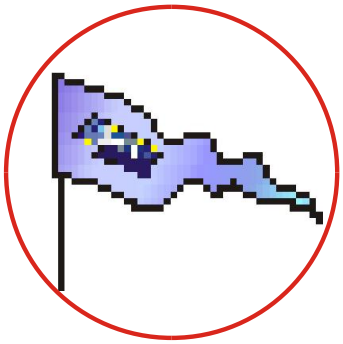
This square was digitally created at 300dpi, meaning (in the simplest terms) there are actually 300 red dots making up the red square. If you now want to enlarge that red square to 2 inches x 2 inches, it is possible, however you still only have 300 red dots to fill that square.

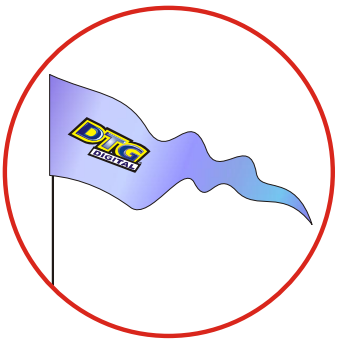
The most common file formats for Raster Images are Bitmaps (.bmp), Jpegs (.jpg), Tiffs (.tif), and Gifs (.gif).



(3) Resolution

Because a Raster or bitmap is made up of little square dots of colour, the images can often have a jagged look. The greater the number of pixel dots per inch the less jagged the image will look. It will also increase the data size of the file considerably. Dots per inch or DPI is the measurement of the pixel density. One example of low DPI images are web graphics. Web graphics are low to minimize the amount of data bites it takes to load a web page. Web graphics are usually 72dpi or 96dpi. In printing on fabric, it is best to use a DPI of at least 200dpi, preferably 300dpi or greater – at the printing size.





Programs such as Photoshop can be used to "upsample" a small, low resolution image to an image of suitable size & resolution, however you must be aware that these programs will make assumptions & calculations as to where to place the extra pixels & what colour to make them. Images that have been upsampled in this way will often have softer edges, but will be less pixilated. Unless you are proficient in graphics programs, it is always best to ask your client for a higher resolution file in the first place.

Also ensure that there is not excessive "blank" space around the edges of the image – even blank space counts towards image size and may cause the actual "picture" to print small in order to fit the entire image on to the platen. Trim unnecessary blank space from the top, bottom & sides of the image.

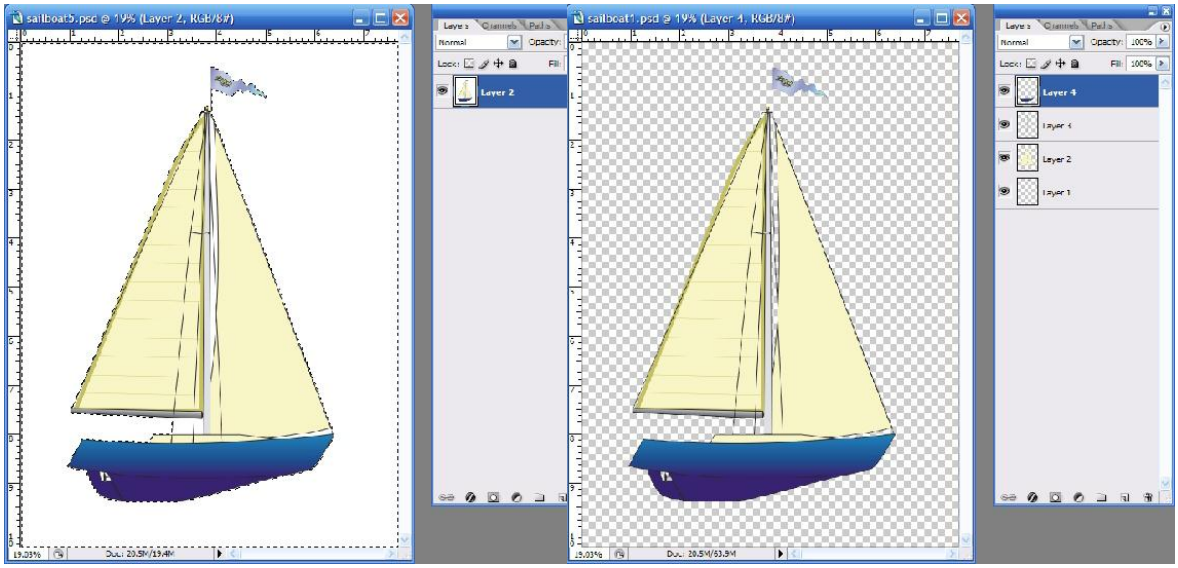
(4) Image Sharpness & Saturation

Images printed to fabric often tend to be softer & darker than what the image appears on screen. You may need to adjust images to give them a colour boost using a saturation adjustment in the graphics program, and/or sharpen the image using suitable sharpening tools within the graphics program.

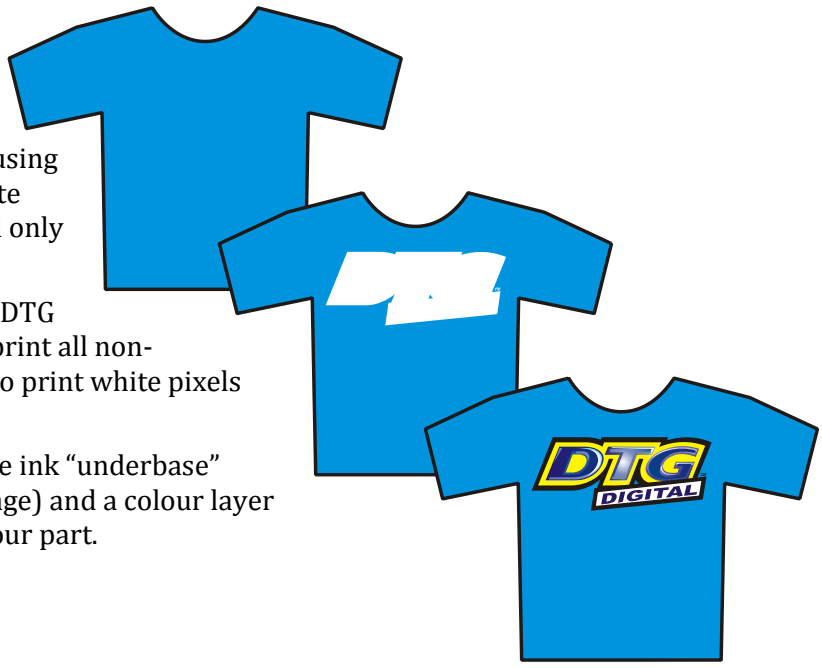
(5) Transparent Backgrounds

As we have already discussed, regular bitmap images are made up of coloured pixels; this includes the background (even a plain white background!). In a digital photograph, the rectangle is filled entirely with colour. Graphic images are not usually just a rectangle. They are shapes and text. The background area is usually filled with white pixels. To print on a media other than white, it is almost impossible to match the digital colour with the colour of the media.

In programs such as Photoshop, the file data includes transparent pixels as a background colour of choice. If the file is set to have a transparent background, then a removed or erased pixel will be virtually removed. Transparent backgrounds are often represented by a grey and white checker board pattern.



WHITE PIXELS IN BACKGROUND TRANSPARENT PIXELS IN BACKGROUND



The standard printer driver was designed to print on a white surface using colour ink. Inherently, it ignores white pixels in an image when printing, and only prints the colour pixels.

The RIP supplied by your authorized DTG Distributor, however, is designed to print all non-transparent pixels, and particularly, to print white pixels with white ink.

It will separate the image into a white ink “underbase” layer (made up of all pixels in the image) and a colour layer with very little additional effort on your part.

4.3 Garment Preparation

TIP

Lint is one of the biggest enemies of the DTG M2™. By shaking your garment (away from the printer) prior to use, you can remove some of the excess lint from the garment. Pressing the garment can also help to contain excess lint. White or light coloured garments which do not need white ink require no further preparation.

Dark fabric, and some colours require a pre treatment process. The pre treat / underbase forms a special receptive surface for the white ink to adhere to. POOR PRE TREAT = POOR PRINT QUALITY. Application of the pretreatment solution is key to obtaining white opacity and ink adhesion to the fabric.

Safety
Please refer to the supplied MSDS sheet prior to use of this product.

This product can be used safely when used as directed and when applicable safety precautions are followed.

Equipment needed for proper pretreatment solution application:

- Respirator (disposable face mask which removes 95+% of airborne particulates (3M™ Model # 8210 or similar)
- Foam Roller (the type used for painting) – optional
- Wide Bristle paint brush - optional
- Liquid Mistifier (airbrush, air pump sprayer, fine mist power sprayer, such as Wagner® Power Sprayer Model HVLP)
- T-shirt Press
- Parchment Paper (also named Quillon paper)

Recommended procedure:

- The following procedure will help ensure consistent quality and performance of the White Ink:
- Agitate or shake the pretreatment solution prior to filling your sprayer. Locate the sprayer area in a different room than your printer(s). Overspray can find its way into the printer and potentially damage the device.
- Locate the sprayer area in a well ventilated area. Set the heat press for 170ºC (~340ºF)
- In humid environments, it is often beneficial to pre-press the shirt (using the parchment paper as a barrier from the press) for 10 to 15 seconds prior to applying the pretreatment. This removes some of the water naturally trapped in the fibers.
- Using the spraying system, spray the underbase / pre-treatment evenly on the area that is to be printed. The recommended coverage is about 20g to 25g (0.7 oz to 0.9 oz) for a 14” x 17” printing area.
- Set your sprayer for medium coverage. This is normally the setting between no liquid being sprayed and the maximum available.
- Prime the sprayer for a few seconds by spraying into a large cup, but not on to the shirt area. This helps prevent larger drops that occur when the sprayer is starting up.

- Keep the sprayer about 12 inches (0.3 meters) from the shirt and begin spraying from the top to the bottom in a left to right (and then reverse, right to left) motion without ever turning off the sprayer
- It is good practice to allow the sprayer to go beyond the edges of the shirt before beginning or reversing direction. This prevents more pretreatment from being deposited on the shirt during the direction change.
- If all settings are correct, you should dispense the proper amount of pretreatment solution in about 15 seconds.

TIP

If you are printing only a small image on the garment, you can make a mask or stencil to place over the garment before spraying, so that only the required print area of the garment receives the pre-treatment. This will save on pre-treatment.

Following the application of the pretreatment solution, and prior to heat pressing, close examination of the garment's surface should show the appearance of fine droplets not unlike dew on grass. A representation is shown below:

FIGURE 4-1 GOOD PRE-TREATMENT

After spraying the garment, you can wipe with the foam roller, uniformly and in one direction, to get even coverage.

For best image quality, drying the pretreated garment in a t-shirt press (using the parchment paper as a barrier from the press) is preferred. A minimum of 15 seconds, up to a maximum of 60 seconds at the 170ºC (~340ºF) setting. This causes the pre-treat to bond the flattened fabric fibers down and produces an optimised surface for ink jet printing. When the white ink comes into contact with the pre treat it causes a chemical reaction resulting in a rapid fixing of the ink. Ensure sufficient pressure on the heat press to properly flatten the fibres of the fabric and provide a smooth even surface for printing.

Examples:

(1) Correct Application of Underbase:

A garment that has been properly pretreated, printed, and heat-pressed will demonstrate strong white layer and color retention, even after several washes.

(2) Insufficient Pretreatment:

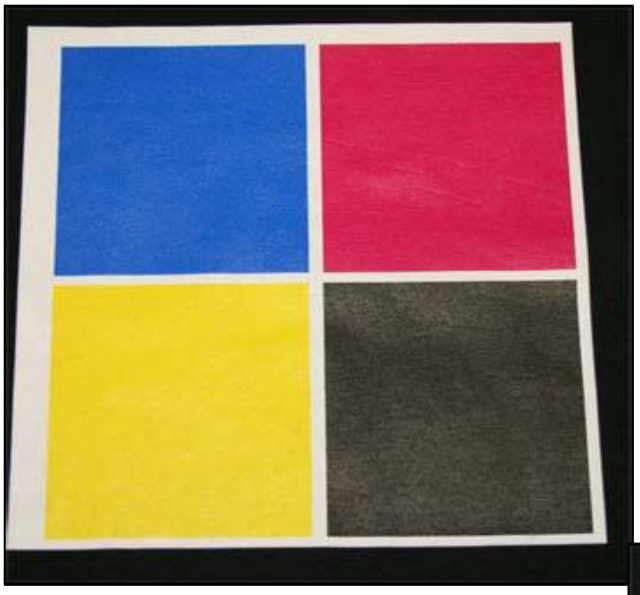
If too little pretreatment solution is applied, the white ink will have a mottled appearance after printing. This is due to an insufficient amount of pretreatment to keep the white ink layer on the surface (the ink soaks into the fibers of the shirt).

FIGURE 4-2 AN EXAMPLE OF INSUFFICIENT PRETREATMENT

(3) Excessive Pretreatment:

Applying too much pretreatment solution will provide you with a very good looking print prior to washing. However, excessive application of pretreatment will cause poor wash fastness and durability. The white layer becomes much more susceptible to flaking off of the shirt in a wash if too much pretreatment is applied.

Here, the shirt with an excessive amount of pretreatment looks very good after printing and pressing.



The same shirt, with excessive pretreatment solution applied, is shown here after washing. This shirt exhibits the cracking and loss of color associated with too much pretreatment being applied.

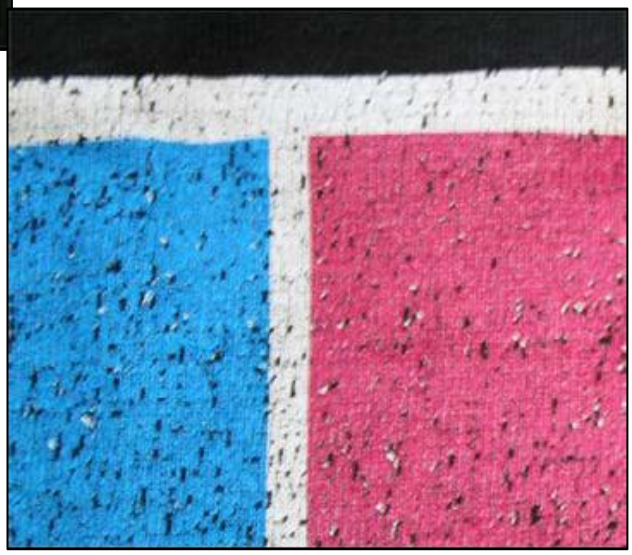


FIGURE 4-3 EXCESSIVE PRETREATMENT EXAMPLE

NOTE

The conditions listed above are general guidelines for the application of the Underbase (pre-treatment) for White Ink. Due to potential differences in the fabric or garment as well as potential differences in fusing equipment, these general guidelines may not be sufficient or applicable in all cases. Each customer should carry out on-site tests to identify the optimal fusing conditions for their preferred fabrics and equipment set-up.

Light coloured garments where you are not planning to print any white ink generally do not require any pre-treatment process.

4.4 Load Garment to Platen / Platen to Printer

4.4.1 Put the garment onto the Platen

Your authorized DTG Distributor will have supplied at least one platen on which to place garments / other media for printing. Please follow the directions provided by the supplier of your DTG M2™ for the proper securing of the garment to the platen.

Flatten / smooth out the printing surface. Ensure that any excess garment is tucked out of the way.

4.4.2 Adjust Printing Bed Height / Move Platen to the Top of Page position

☞ *3.6.4 "Loading Media for Printing" p.49*

4.5 Print Your Image

Refer to the manual for your RIP for detailed information on sending print information to the DTG M2™.

Checking PRINT QUALITY
Print quality is an extremely important component of the printing process. You can check the print quality by printing a Nozzle Check ☞ *3.6.6 "Performing a Nozzle Check Test Print" p.53*. Be aware that you will need to do a Head Cleaning:

- if any streaking appears in the print
- if small drops of ink get on the garment during a printing cycle
- if the unit has been sitting for a few days
- if the printing head brushes the garment

TIP

☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41.* Severe head clogging may require you to do several head cleanings one after the other.

4.6 Post-Printing

After DTG M2™ has finished printing, the Printing Bed will automatically eject the platen to the front of the printer (or to the rear of the printer if your RIP allows this feature).

Remove the GARMENT
Carefully remove the garment from the Platen, so as not to smudge the wet ink.

HEAT CURE Your Finished Print
The final step is to heat cure your finished prints to completely set the ink. All prints (on knitted cotton) should be cured (fixed) at 335° F (170° C) for 120 seconds at 10psi. Equipment temperature settings should be calibrated using a thermocouple or infra-red thermometer.

NOTE

The conditions listed above are general guidelines for fusing of the DTGTex range of inks . Due to potential differences in the fabric or garment as well as potential differences in fusing equipment, and operating environments, these general guidelines may not be sufficient or applicable in all cases. Each customer should carry out on-site tests to identify the optimal fusing conditions for their preferred fabrics and equipment set-up.

WASHING Garments
Garments printed with the DTG M2™ can be laundered as normal, with a few restrictions. It is a good idea to give your customer the following washing instructions:

TIP

Turn the garment inside out before washing and drying, use cold water only and a medium dryer temperature.

4.7 Cancelling a Print Job

4.7.1 Introduction

On rare occasions you may find you cannot get your printer to print. Check the following to rectify the problem:

- Is the printer in the ready state when you send the print command?
- Is there a message on the Control Panel LCD Display or an indicator light on the Control Panel
- Is there a problem with the file you are printing from?

4.7.2 Cancelling the Print Job

It may be best to cancel the print job and start again. As with any inkjet printer, it is sometimes difficult to stop a print job with the DTG M2™ once you have set it in motion.

1. Firstly, press the Emergency Stop button on the front of the printer – this will immediately cut power to the printer & stop the print job.
2. Press the [Power] key to return the Control Panel to an "off" state.
3. Open the Top Cover of the printer and gently slide the Carriage Assembly to the right until it "clicks" into it's home position on the Capping Station.
4. Cancel / clear the print job from the RIP and / or the Windows Print Queue.

⚠ CAUTION

Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

4.7.3 Re-starting the Printer after Cancelling a Print Job

Re-start the printer by following the steps shown at ☞ *3.5.1 "Switching the Printer ON" p.29*

5.General Care & Maintenance of your DTG M2

5.1 Introduction

Whilst your DTG M2™ is built with many standard components from a Mutoh printer, and shares the ease of use of a standard professional printer, that's where the similarities end. Your M2 will be operating under what could be considered extreme conditions for an inkjet printer – exposure to pretreatment sprays and lint from garments, and pushing out increased volumes of ink (when compared to standard "paper" printing). As such, it is important that you take a few minutes each day to properly maintain your DTG M2™ – this will ensure that it runs in optimal condition.

5.2 Execute a Print Head Clean at the end of production

Execute a Print Head Clean at the end of your daily production. ☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41*

5.3 Run the Epson Nozzle Check utility each day before starting production

You'll discover any missing nozzles BEFORE they show up on your printed garment! Refer Section *3.6.6 "Performing a Nozzle Check Test Print" p.53* for further information.

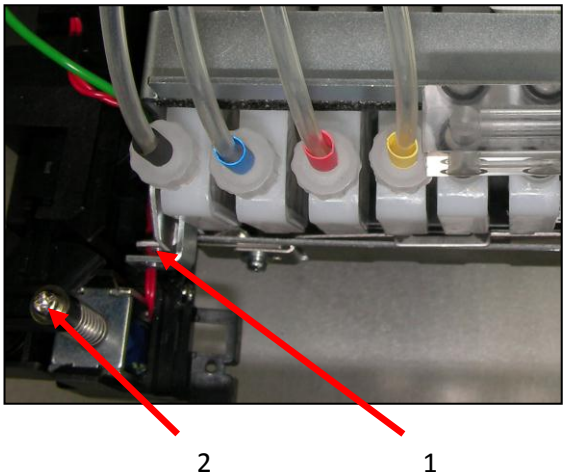
5.4 Maintaining the Ink System

5.4.1 Accessing the Capping Station

NOTE

No tools are required for this procedure.

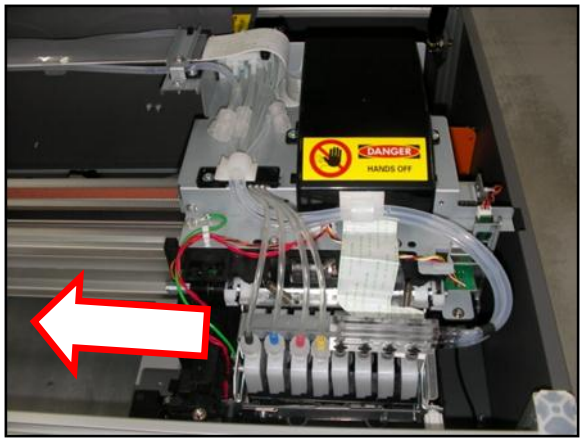
1. Open the top cover (lid) and locate the carriage lock unit near the colour dampers.
2. Locate the carriage lock screw and gently depress.



No.	*Part name*
1	Carriage lock
2	Carriage lock screw

The carriage assembly will make a clicking sound and may move softly to the left.

3. Push the carriage assembly gently to the direction of the arrow, away from the capping station.



CAUTION

Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

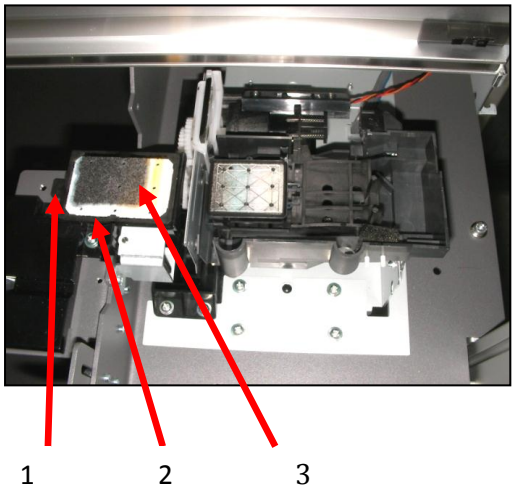
5.4.2 Cleaning the Flushing Tray

NOTE

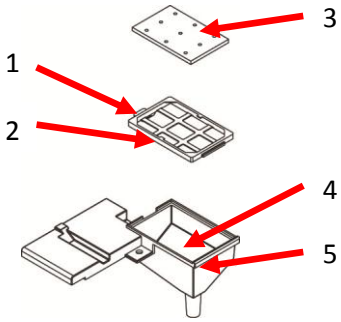
No tools are required for this procedure. The flushing tray must be cleaned on a daily basis. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

Stubborn or dried ink can be removed carefully with tweezers or a toothpick.

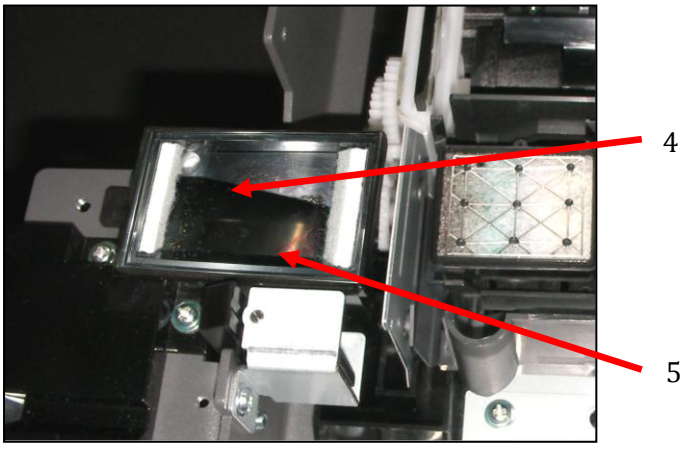
1. Access the capping station.
2. Grip the Flushing Frame Clip firmly with thumb on the top left edge of the holder and fingertip under the clip.
3. Peel the clip up and gently remove.



No.	Part name
1	Flushing Frame clip
2	Flushing Frame
3	Flushing Tray
4	Flushing Box
5	Flushing Box edge



4. Clean inside the Flushing Box and around the edge with a swab and cleaning fluid.
5. Flush the Flushing Tray gently with cleaning solution and then rinse in warm water, DO NOT SQUEEZE.



CAUTION

Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

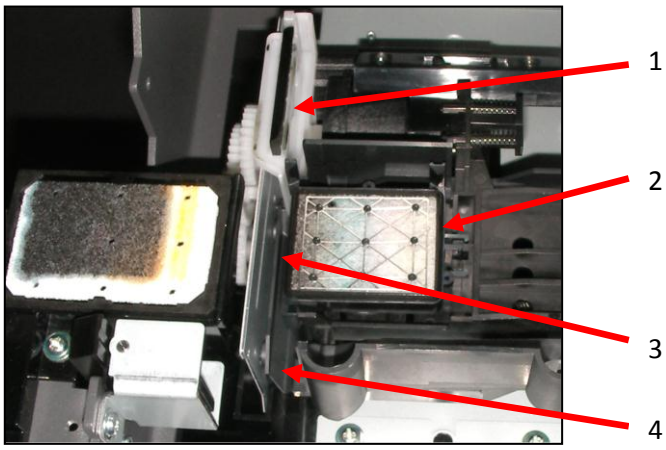
5.4.3 Cleaning the Wiper and Head Cap

NOTE

No tools are required for this procedure. The wiper, gutter, slider and head cap must be cleaned on a daily basis. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

Stubborn or dried ink can be removed carefully with tweezers or a toothpick.

1. Access the capping station.
2. Clean the wiper and slider carefully with a swab and cleaning fluid.
3. Clean the gutter with a swab and cleaning fluid.
4. Clean the head cap lip with a swab and cleaning fluid.



No.	*Part name*
1	Wiper
2	Head cap lip
3	Slider
4	Gutter

5. Pour a few drops of cleaning fluid into the cap.
6. Slide the carriage (right) back into home position so that it locks into the capping station.

CAUTION

Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

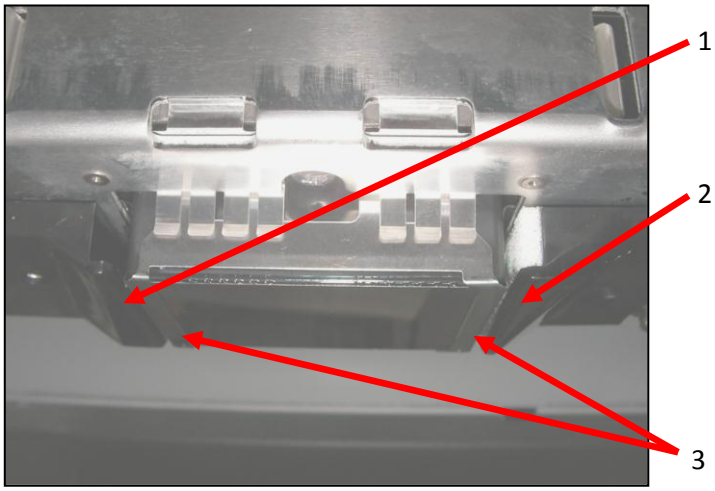
5.4.4 Manual Print Head Guards Clean

NOTE

No tools are required for this procedure. The head surrounds must be cleaned on a daily basis. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

Stubborn or dried ink can be removed carefully with plastic tweezers or a toothpick.

1. Remove any platens from the printer.
2. Release the carriage assembly (see accessing the capping station).
3. Move the carriage to the centre of the printer.
4. Clean the leading and trailing edges of the carriage with a swab and cleaning solution.



No.	Part name
1	Leading edge
2	Trailing edge
3	Print head edge

1. Carefully clean the metal edges of the print head with a swab and cleaning solution.

CAUTION

Do not touch the print head face.

CAUTION

Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

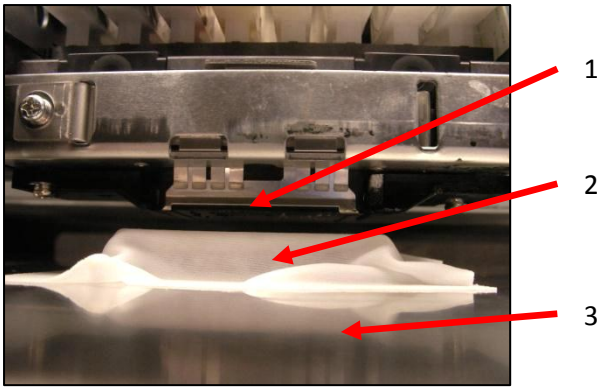
5.4.5 Parking the Print Head

NOTE

This process allows the operator to park the print head in such a way that remedial work may be carried out in the capping station or upper carriage assembly without damaging the print head due to ink drying in the nozzles. No tools are required for this procedure. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

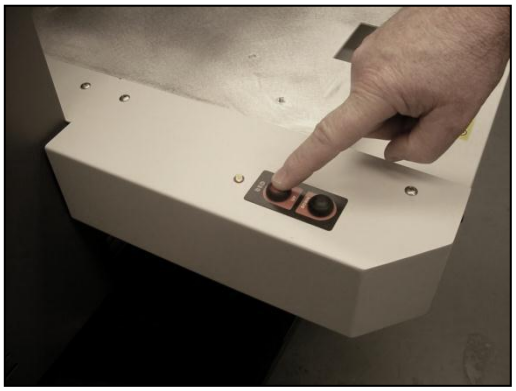
Absorbent paper towels and the sponge & microfiber cloth (from maintenance kit) will be required for this process.

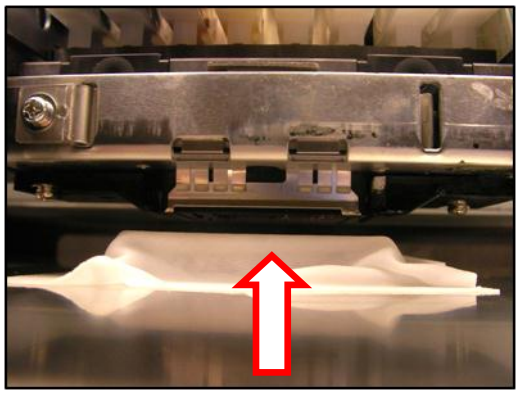
1. Place a sponge from the cleaning kit onto the platen.
2. Pour enough cleaning fluid onto the sponge until it becomes saturated.
3. Place a piece of the white microfiber cloth (from the cleaning kit) over the top of the sponge.
4. Unlock the carriage and slide it towards the left.
5. Align the print head face to the cloth covered sponge.



No.	Part name
1	Print head face
2	Cloth covered Sponge
3	Platen

6. Carefully raise the platen bed by pressing the bed UP button until the print head face is pressed lightly against the saturated sponge. The sponge must be compressed to NO LESS than two thirds of its original height.





CAUTION

Do not allow the sponge to press too hard against the print head as this will cause catastrophic damage to the print head, carriage assembly and platen drive system. The sponge must be compressed to NO LESS than two thirds of its original height.

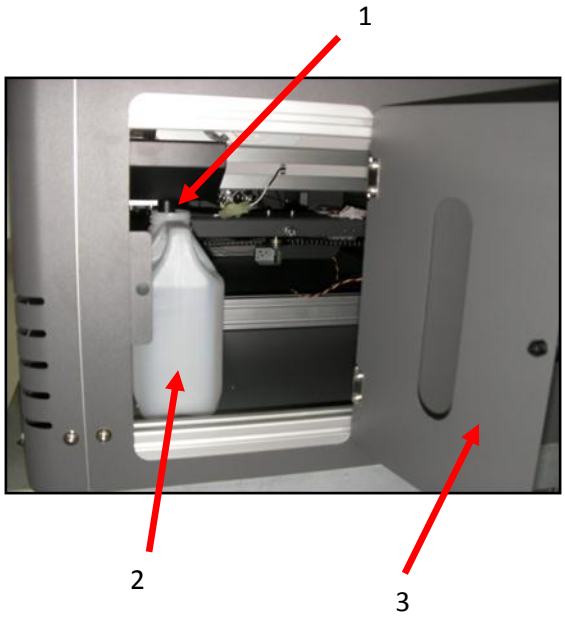
5.4.6 Emptying the waste ink container

During the Head Cleaning process your DTG M2™ forces ink through the print head. This excess ink goes into a holding bottle called the **Waste Ink Container**. Check this bottle regularly, and empty it when it is getting full or before an ink flush or power clean procedure. Remember you must comply with local regulations in disposing of its contents.

NOTE

No tools are required for this procedure. Waste ink should be checked on a daily basis and disposed of in strict accordance with local ordinances and regulations.

1. Open the waste container door to allow access to the container.
2. Carefully tip the container so that the base comes towards you.
3. Ensure that the container opening clears the waste pipe.
4. Remove the container through the waste container door



No.	*Part name*
1	Waste pipe
2	Waste container
3	Waste container door

CAUTION

Do not allow the waste container to become too full as this will result in waste spillage. Take care not to tip the container too far when removing.

Be sure to dispose of waste ink in strict accordance with local ordinances and regulations.

5.5 Other Maintenance Items

5.5.1 Powerful Head Cleaning

In some instances, the Head Cleaning mentioned above in Section ***3.5.5 "Performing a Head Clean from the Operation Panel" p.41*** is not strong enough to clear stubbornly blocked nozzles. In these cases, it may be necessary to execute a stronger cleaning on the printer via the Control Panel menu. The same menu can be used to execute an ink charge in instances where it is necessary to move a larger volume of ink through the printer (such as refilling of inks, flushing the system etc.).

It must be noted that this process consumes a considerable amount of ink and should only be used *in extreme situations:*

CAUTION

Ensure that the Waste Ink Container has been emptied in accordance with Section ***5.4.6 "Emptying the waste ink container" p.96***

The powerful clean / ink charge options can only be accessed through a "hidden" menu called the Self-Diagnosis menu.

CAUTION

Note that the Self-Diagnosis menu contains several menu options which are intended for use ONLY by a trained & authorized DTG technician. It is very important that you do not execute any other of the menu options available in the Self-Diagnosis menu – incorrect settings or the execution of some menu items may result in damage to your printer.

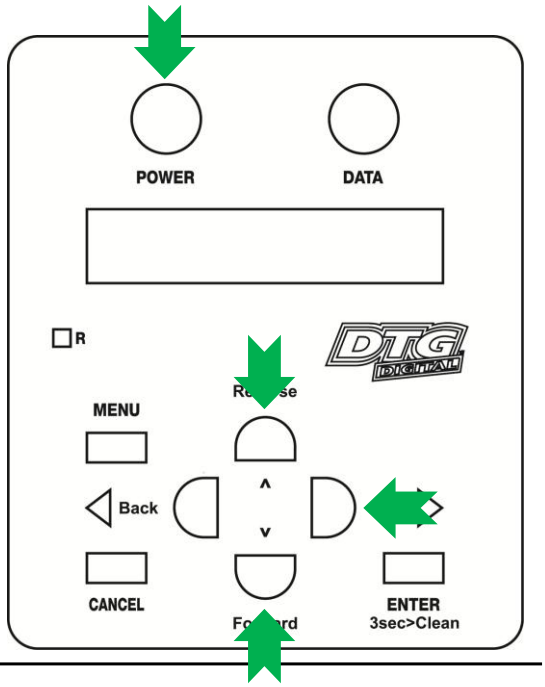
5.5.1.1 Accessing the Self-Diagnosis Menu

To access the Cleaning menu , select the self-diagnosis menu on the operation panel.

The self-diagnosis menu is completely independent of the normal operation mode and self-diagnosis display mode. To call up the self-diagnosis menu, follow the steps below.

3. If the system is in the operation mode or the self-diagnosis menu mode, press [Power] key to turn the printer off.

4. While holding down [Reverse] key, [Forward] key and [Next >] key in the operation panel simultaneously, press [POWER] key.



NOTE

Be sure to continue to depress the [Reverse] key, [Forward] key and [Next >] key in the operation panel until the printer emits a series of "beeps".

The system will enter the self-diagnosis mode and display the self-diagnosis menu:

- After a short delay the screen will display `Initializing`
- Shortly thereafter, the printer will emit a series of "beeps"
- After another short delay, the screen will display `Check : Test` – this is the first menu item in the Self-Diagnosis Menu

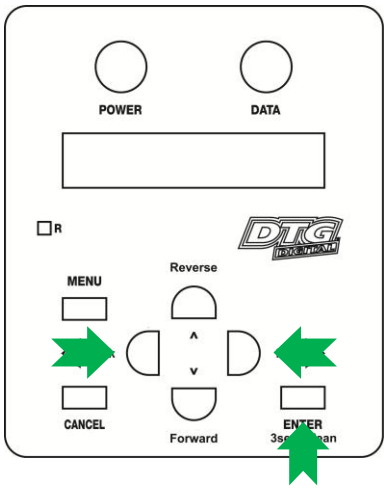
5.5.1.2 Navigating to the Cleaning Menu

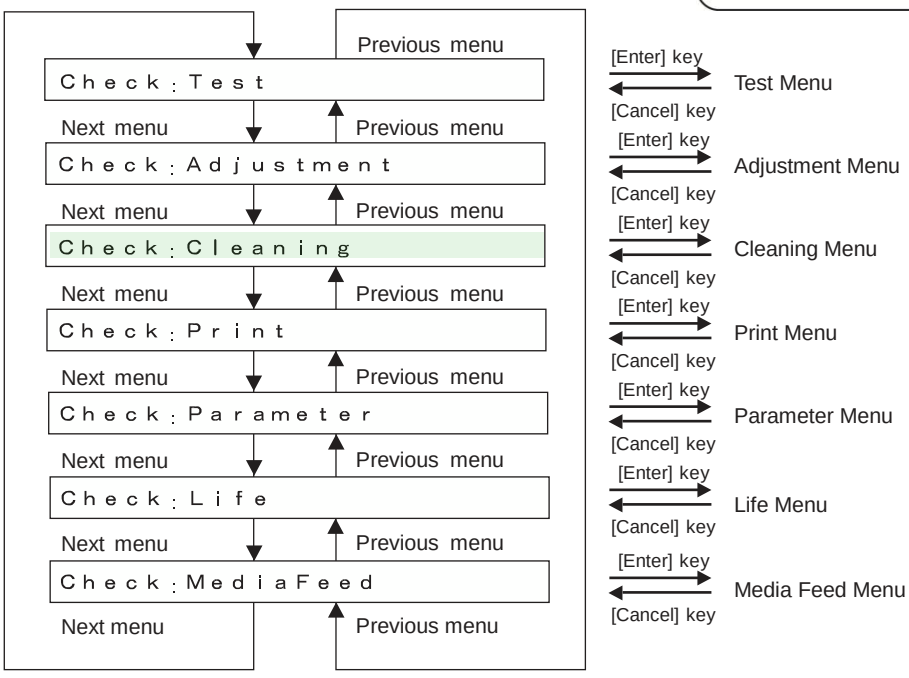
Follow the operation flow shown below to operate the self-diagnosis Menu and access the Cleaning Menu.

2. Press [Next] key or [Back] key in the operation panel to scroll through the menu. Then, press [Enter] key to confirm the menu option displayed.

   The button presses required to enter the Cleaning Menu from the start of the self-diagnosis menu are:

   [Next] [Next] [Enter]





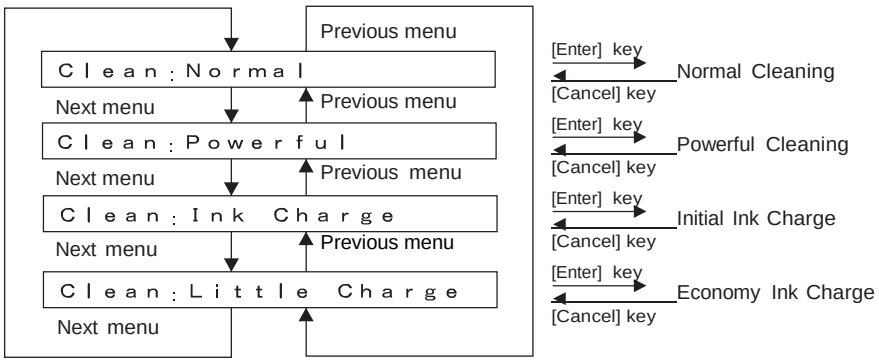
3. When the [Enter] key is pressed to confirm / select the `Check:Cleaning` menu option, the Print Head will release from the Capping Station and make small movements & some noise for 15-20 seconds or so before settling back into the Capping Station. This is normal. Then the first item of the Cleaning Menu will display – `Clean:Normal.`

5.5.1.3 Select the Cleaning Option Required.

1. Press [Next] key or [Back] key in the operation panel to scroll through the menu. Then, press the [Enter] key to confirm the menu option displayed.
2. The Cleaning Menu options are:

Cleaning Menu Option	*Contents*
Normal	Performs normal cleaning.
Powerful	Executes main suction part of normal cleaning with 10 times as many steps.
Ink charge	Performs initial ink charge.
Little charge	Performs economy ink charge.

TABLE 5-1 ITEMS IN CLEANING MENU



NOTE

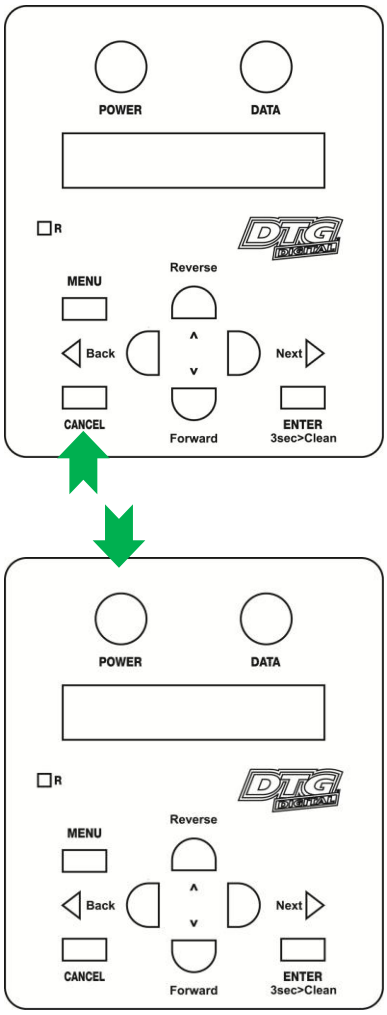
Executing several consecutive Ink Charges may trigger the printer's internal waste ink counter. This is a self-protection mechanism to help remind the user to monitor & empty the waste ink container. If the waste ink counter is triggered during an Ink Charge, it will be evidenced by the printer appearing to "freeze" during the Ink Charge – it will display `Charging` on the display panel without the printer pump running for 30 seconds or more.

To reset the internal waste counter, it will be necessary to power the printer off (☞ *3.5.2 "Switching the Printer OFF." p.31*) and then restart it in Normal mode (☞ *3.5.1 "Switching the Printer ON" p.29*). If it is necessary to continue the ink charge process, again turn the printer off, and restart it in the Self Diagnosis mode ☞ *5.5.1.1 "Accessing the Self-Diagnosis Menu" p.97*

1. Exiting the Cleaning / Self Diagnosis Menu

To quit the selected menu option, press [Cancel] key in the operation panel.

- The system returns to an upper hierarchy of the diagnosis menu.



2. To exit the self-diagnosis menu, press [Power] key. This will turn the printer off. To re-start the printer in the normal mode, turn the printer on in accordance with ☞ ***3.5.1 "Switching the Printer ON" p.29***

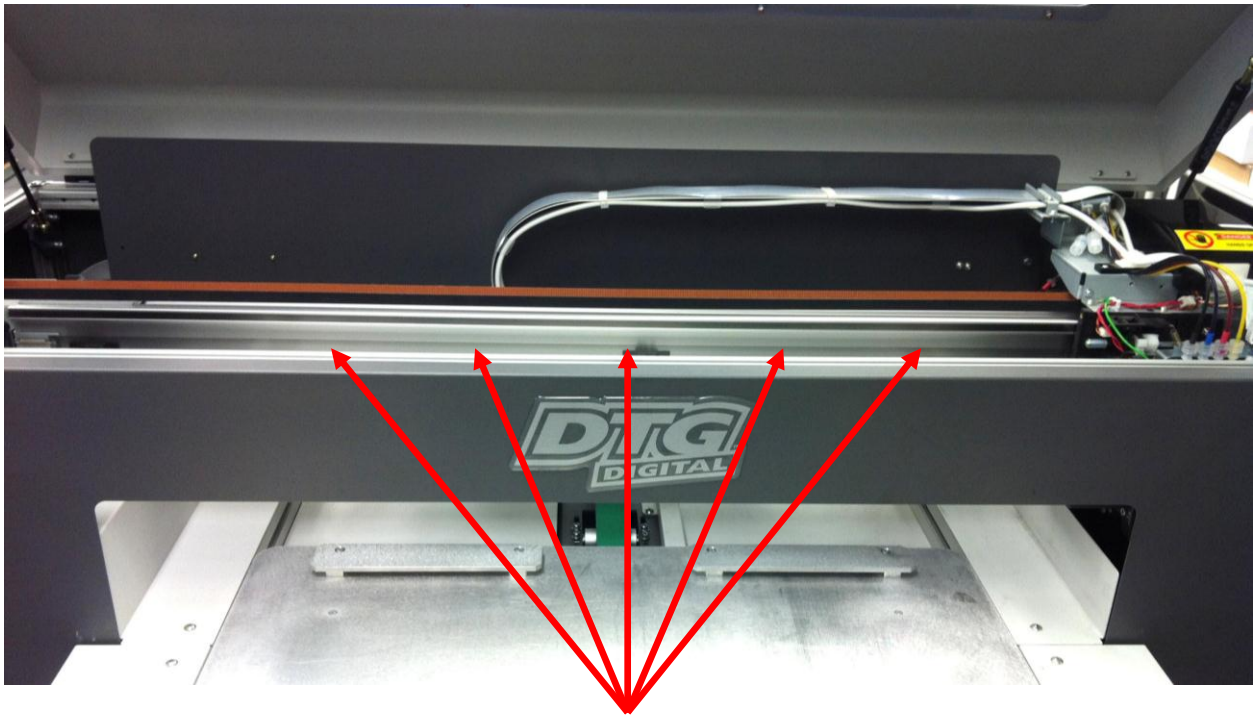
5.5.2 Clean the CR Encoder Strip

NOTE

No tools are required for this procedure. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

The microfiber cloth (from maintenance kit) will be required for this process.

The Encoder Strip is the thin plastic strip that runs behind the Print Head for the length of the carriage area. It looks to be clear or at least slightly grey in colour, but is in fact clear with hundreds of fine vertical marks on it. There is a sensor that sits at the rear right side of the Print Head carriage which "reads" these vertical marks so that the Print Head knows exactly where to spray the ink. You can understand that if this strip gets dirty, the sensor will be unable to read these marks properly and your printer is likely to get "confused". Lint from your garments, ink overspray, and even airborne pre-treatment spray can all contribute to a grime build-up on the Encoder Strip, and it is important that you clean this strip at least weekly, even daily if you have a high daily production volume:



1

No.	Part name
1	CR Encoder Strip

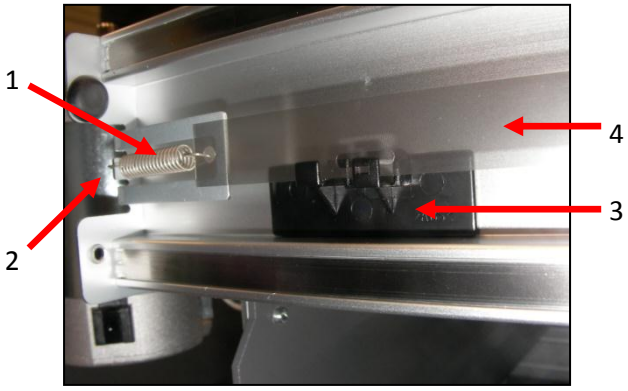
NOTE

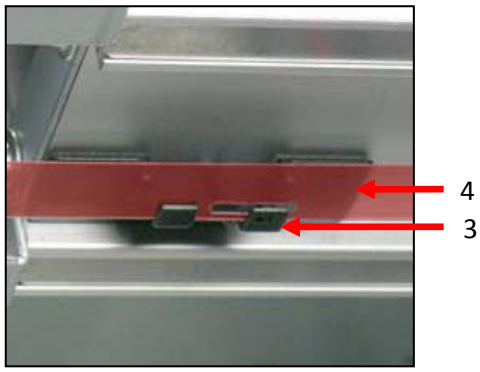
Before cleaning the CR encoder strip, ensure the printer is switched off ☞ *3.5.2 "Switching the Printer OFF." p.31*

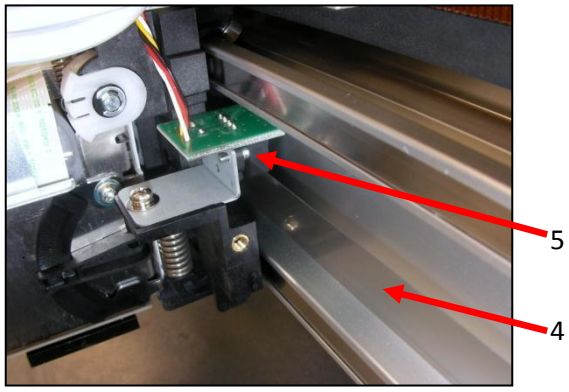
CAUTION

When performing the following steps, be careful not to touch the CR Encoder Strip with bare hands or get it soiled with ink. Also be extremely careful not to scratch it by, for example, hitting it against frames. Any dirt or scratches on the CR Encoder Strip may cause a malfunction of the CR Encoder Sensor.

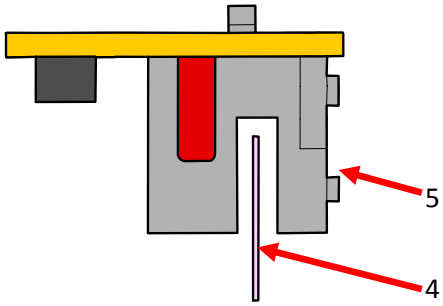
- Do not pull the CR encoder strip by force; CR encoder strip guide can be easily broken.
- Pay attention not to damage or break the CR encoder strip.



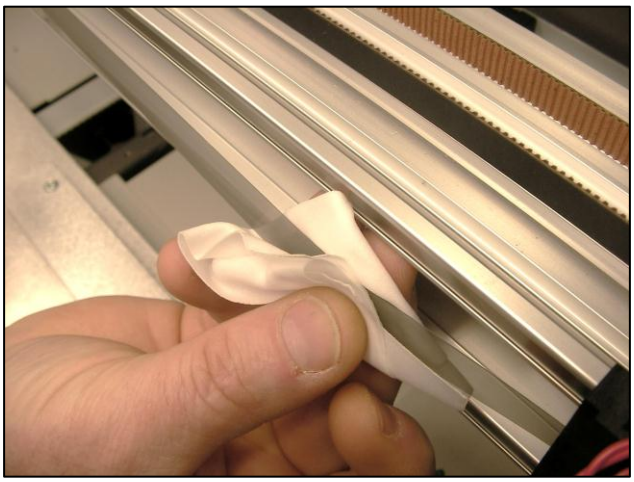




No.	Part name
1	CR Encoder Spring
2	CR Encoder Spring Hook
3	CR Encoder Strip Guide
4	CR Encoder Strip
5	CR Encoder Assembly



Using a microfibre cloth (as supplied in the maintenance kit of the printer), moistened with distilled or purified water, or approved Cleaning Solution, GENTLY rub both faces of the encoder strip.



CAUTION

Do not rub with excessive force as you may remove the markings from the CR Encoder Strip.

If the cloth or applicator gets dirty, discard it and use a clean one.

Release the Print Head Carriage (refer *5.4.1 "Accessing the Capping Station" p.90*) and gently slide the Print Head Carriage from it's home position. This will give you easier access to the other end of the encoder strip.

Allow the encoder strip to dry thoroughly before using the printer again.

CAUTION

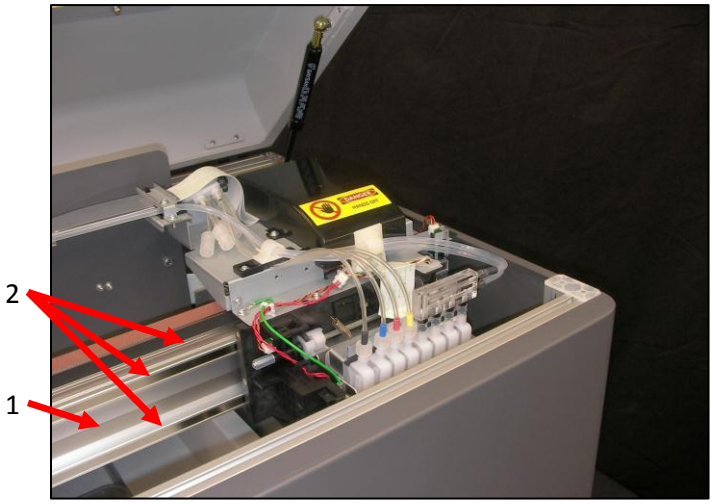
Do not allow the Carriage assembly to remain out of the capping station for longer than two or three minutes. Failure to do so will result in possible blockage of print nozzles due to ink drying. This may result in irreversible damage to the print head requiring print head replacement.

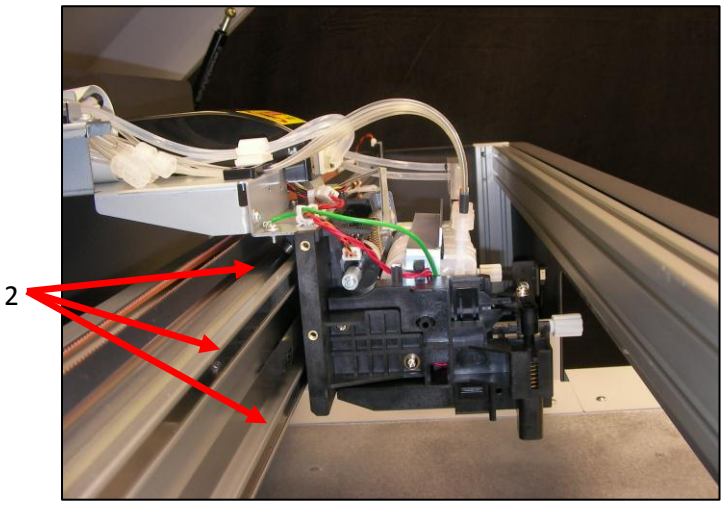
5.5.3 Clean the CR Guide (X Rail)

Inspect the CR Guide (X Rail) regularly & remove any dust & grime build up with a soft dry cloth.

In most instances, it will not be necessary to re-grease CR Guide, as the Carriage moves along the guide supported by roller bearings. A very small amount of White Lithium based grease can be applied to the bearing surface CR Guide every 6 months or so if necessary.

No.	*Part name*
1	CR Guide (X Rail)
2	CR Guide Bearing Surface

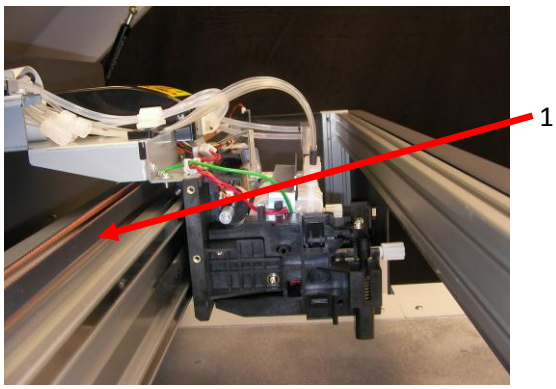




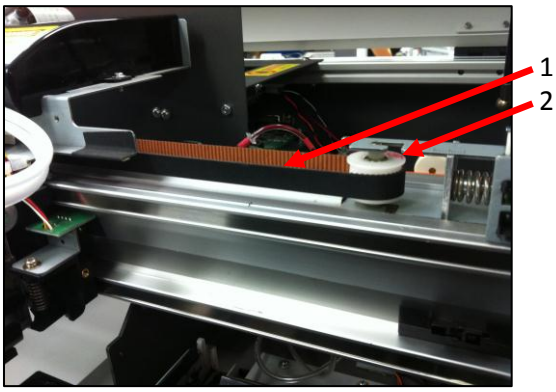
5.5.4 Clean the CR Drive Belt, Roller and Pulley

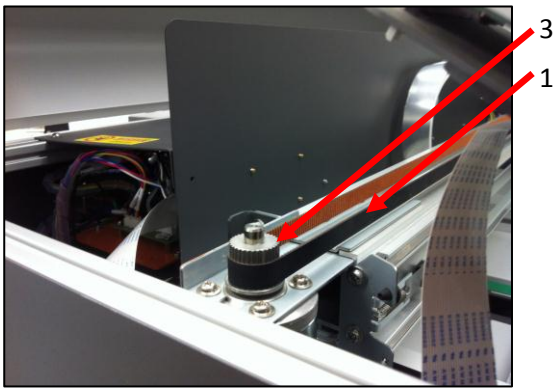
The CR Drive Belt, Pulley & Roller can collect a build-up of pre-treatment, dust & lint in their "teeth". An excessive build up can cause the Print Head to "skip" during printing.

The Drive Belt & Gear are driven by the CR Motor, and in turn drive the Print Head itself left & right during the printing process. These components are located along the top of the CR Guide, the CR Belt Roller is directly behind the Carriage Assembly (when in home position), the CR Drive Belt runs the length of the Carriage area, and the Roller is located on the far left side of the printer.



No.	Part name
1	CR Drive Belt
2	CR Belt Roller
3	CR Belt Pulley





Use a small brush or mini-vacuum cleaner to clean the teeth of the Drive Belt and the Drive Gear. You may also need to use a small sharp object and/or a small pair of tweezers to remove stubborn build up (take care not to scratch or damage the Drive Belt or Gear in doing this).

The Roller should also be cleaned. This should be done monthly, or more frequently if your DTG M2™ produces high volumes of output.

CAUTION

Take care not to touch the encoder strip during the cleaning process as it can be easily damaged, and attempt to "capture" any debris removed from the Drive Belt so that it does not contaminate other working components of the printer.

5.6 General Care

5.6.1 Environment

It is important to maintain consistent environmental conditions so that your DTG M2™ can run at it's best. Inkjet printers like humidity levels of 40 – 70%. They do not like extremes in temperature, so it is best to operate your DTG M2™ in an air conditioned environment – but not such that fans are blowing directly across the printer (and therefore the print head which may dry the ink in the print head itself). As the ink needs to be stored no less than 5° Celcius (41°F) and no more than 30° Celcius (86°F), this is also the recommended operating & storage temperature range for your DTG M2™. ☞ *3.3.1 "Installation Environment Requirements" p.25*

Dust is also an enemy of the DTG M2™ (and in fact any ink-jet printer). The working environment should be relatively dust free.

5.6.2 Clean your DTG M2™

Lint, dust and pre-treatment overspray can build up and interfere with not only the "internal" workings of the printer, but also the operation of the printer bed. Turn the printer off and clean all accessible surfaces of the printer with mild cleaner and a soft cloth (do not spray the cleaner directly onto the printer, rather onto the cloth) to remove dust & grime build up.

Ensure that any ink spills on or around the ink bottles in particular are cleaned immediately. If spilled ink dries on the ink bottles, specifically near the threads of the bottles or the lids, then that dried ink can potentially flake & transfer into the ink within the ink bottles. Those flakes of ink can make their way through the ink tubing and block the dampers and/or the print head.

5.6.3 Avoid White Ink Separation

White Ink is a water based titanium dioxide solution. The titanium dioxide is ground into a fine powder and mixed with other binders to allow it to dry and adhere to the pre-treated fabric. Titanium dioxide is what gives the ink its bright white properties, and this brightness gives the coloured ink layer a vibrant and rich colour.

White Ink Properties & Maintenance

Direct to Garment printers have been plagued with ink clogging issues and general instability since white ink was released in late 2005 to the market. There have been significant improvements in the general stability of white ink in that time, however due to the chemical properties of white ink it still requires more maintenance than the colour inks. Titanium dioxide is a mineral and does not dissolve in liquids. This means that the titanium dioxide will, over a period of time, settle to the bottom of the container (being the ink bottles, ink tubes and / or dampers). Once complete, separation of the titanium dioxide from the binders and other components in the ink cannot be reversed! It is therefore critical that any stock white ink be gently agitated or swirled daily, or at minimum every 2-3 days to maximize the shelf life of the white ink. The patented WIMS system on the printer will help to maintain the ink within the white ink tubes.

5.6.4 Replace WIMS filter

The filter used in the WIMS system is a consumable, disposable item, and should be replaced at least once per month – more frequently during periods of high white ink consumption.

Disconnect power to the WIMS unit so that the white ink is not circulating.

Carefully disconnect the luer connectors (2 x M lock) at either side of the WIMS filter, and remove the filter.

Replace the filter, taking care that it is placed in the correct orientation for inflow of ink.

5.6.5 Empty & Wash White Ink Canister

White Ink, as described previously, is prone to "settling". The stirrer on the WIMS & the circulation pump do much to minimize this sedimentation of the white ink, however there is still likely to be a sedimentation build up in the base of the white ink canister over time.

At least monthly, disconnect the power to the WIMS system, clamp the white ink tubes closed (☞ *3.6.3 "Initial Ink Fill Process – White" p.47*), and empty the white ink canister (empty contents back into clean ink supply bottle temporarily). Thoroughly clean & dry the white ink canister & the underside & thread of the lid to the white ink canister. Re-fill the canister, unclamp the white ink tubes & re-connect power to the WIMS unit. Allow the ink to circulate again for ½ hour or so before printing.

5.6.6 Ink Levels

It is recommended that you keep your ink bottles (particularly the white ink) ½ to ¾ full at all times. It is important that the white ink system in particular does not suck dry.

5.6.7 Pre-Treat garments away from the printer

The pre-treatment for printing of white ink is very sticky, and airborne particles of the spray can very easily find their way into, and clog up the moving parts of your DTG M2.

For this reason, we recommend that you spray the white ink pre-treatment to your garments in a separate room, or at the very least, make up a "spray booth" to contain the spray so that it does not contaminate the printer. The spray station should be at least 5 metres (15 feet) away from the DTG M2™, with forced extraction of the pre-treat vapours.

5.6.8 Flushing the printer

If the printer is to be left idle for a long period of time (1 – 2 weeks), then you should flush the system with Cleaning Fluid.

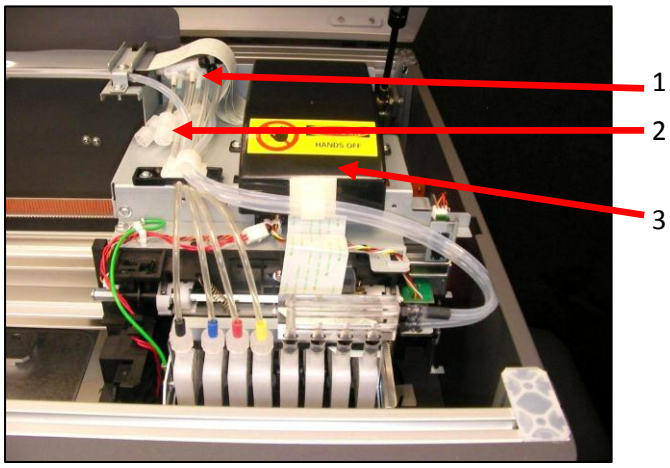
NOTE

No tools are required for this procedure. Use protective gloves to avoid stained fingers. Use recommended cleaning fluid ONLY.

The syringe & tube adapter kit (from maintenance kit), and up to 3 litres of cleaning fluid will be required for this process.

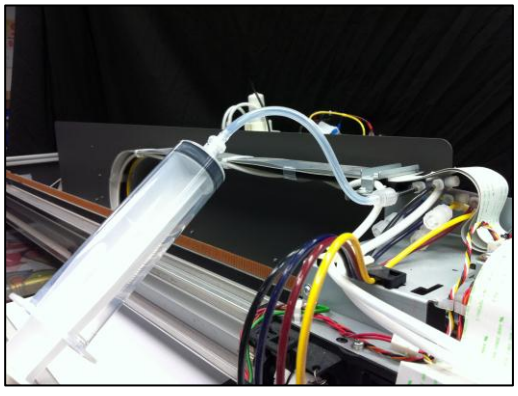
(1) Discharge ink from ink lines

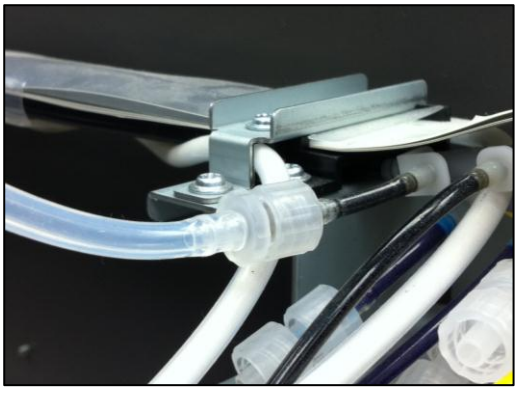
1. Perform CMYK ink discharge operation to discharge ink entirely from the ink paths:
   - Ensure that the printer is switched off ☞ *3.5.2 "Switching the Printer OFF." p.31*
   - Loosen the lid from one of the colour ink containers to release the pressure



No.	*Part name*
1	3 way joints
2	Connector caps
3	CR board assembly cover

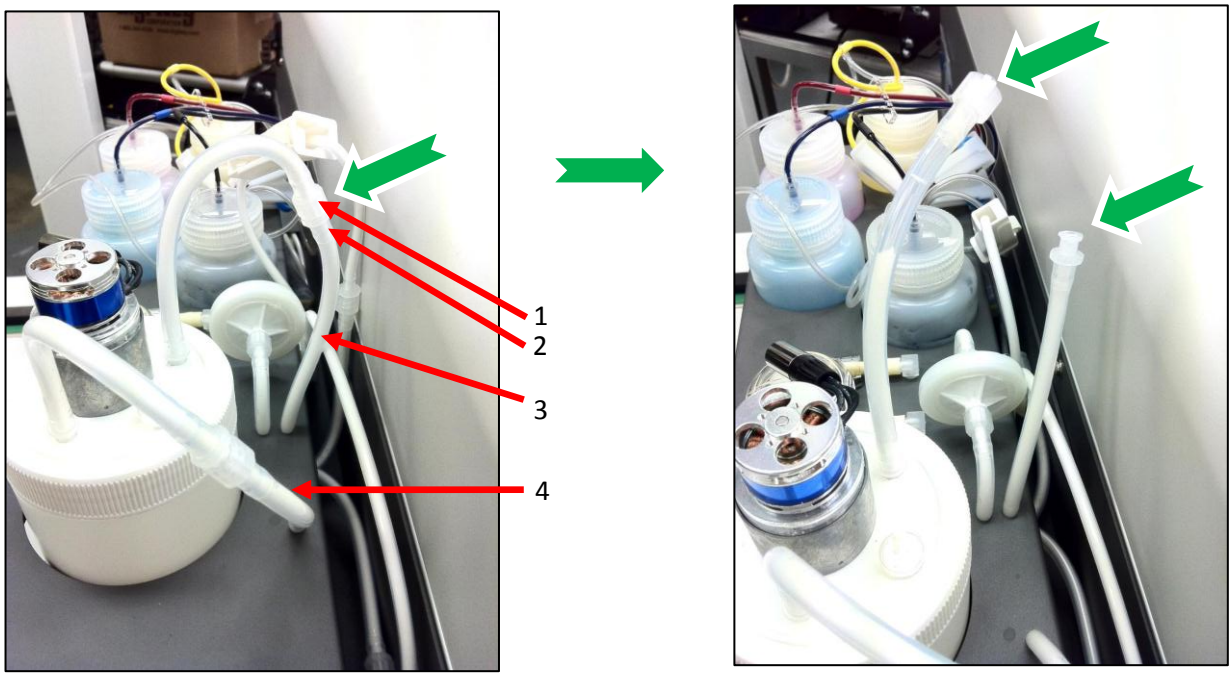
   - Locate the connector caps (4) on the 3 way joints for the C,M,Y & K ink tubes (located to the left of the CR board assembly cover).
   - Remove the cap from the connector for the first ink colour that you wish to discharge.
   - Pull the syringe plunger to fill the syringe with air
   - Connect the syringe & tube adaptor kit to the un-capped connector.





- Gently depress the plunger on the syringe to push the ink in the ink tube back into the ink bottle.
- Disconnect the syringe and tube adaptor kit, re-connect the connector cap.
- Repeat the above process for the remaining ink colour lines

2. Perform white ink discharge operation to discharge ink entirely from the ink paths:
   - Ensure that the printer is switched off ☞ *3.5.2 "Switching the Printer OFF." p.31* Switching the Printer OFF.
   - Carefully disconnect the luer connectors (M lock & F lock) at the white ink feed tube at the white ink tank



No.	Part name
1	M lock
2	F Lock
3	White ink feed tube
4	White ink return tube

- Switch on the power to the printer as described in *Section 3.5.1 "Switching the Printer ON" p.29*
- This will supply power to the WIMS system, allowing any white ink in the ink lines to circulate back to the white ink container.
- After several minutes, again remove power from the printer (☞ *3.5.2 "Switching the Printer OFF." p.31)*, to stop the WIMS circulation.
- Re-connect the luer connectors (M lock & F lock)

(2) Empty & Clean Ink Bottles

1. Empty the inks from the CMYK and White ink containers into clean bottles, or back into the stock ink supply bottles.
2. Wash and dry the CMYK and White ink containers and lids.

(3) Initial Flush of White Ink System

Due to the re-circulation process of the WIMS, the White Ink System requires an initial flush to remove residual white ink from the white ink lines & manifold.

1. Half fill White ink container with Cleaning Fluid.
2. Switch on the power to the printer as described in ***Section 3.3 "Choosing a*** Place for the Printer
3.
4. ***Do*** not place the printer in a location under the following conditions. Doing so may cause the product to fall over, become damaged, or cause serious injury:
5. Unstable or shaky surfaces.
    - Slippery, slanted or angled surfaces.
    - Locations that are subject to vibration from other products.

- Do not stand, or lean, on the printer or place any objects on it. Doing so may cause it to fall over, become damaged, or cause injury.
- Do not cover any ventilation holes or slots of the printer with anything at all. Doing so could prevent the printer from ventilating and cause fire.
- Keep the printer away from damp, humid or dusty areas. Failure to do so may result in electrical shock or fire.

5.6.9 Installation Environment Requirements

Choose a place for printer installation following the requirements of the table below.

Installation space		5m2 or more, 2.6m or more is required for the width	
Floor loading capability		Up to 3000Pa (450kgf/m2) or more	
Electrical specifications	Voltage	AC 100 V - 120 V ± 10% or AC 200 V - 240 V ± 10% (auto-switching)	
	Frequency	50/60Hz ± 1Hz	
	Capacity	Up to 4A or more	
Environmental conditions		*Temperature*	*Humidity*
	Operation environment	18º C (64F) to 30ºC (86F)	20% to 80%, with no condensation
	Printing accuracy warranty range	18ºC (64F) to 28ºC (82.4F)	40% to 60%, with no condensation
	Rate of change	2ºC per hour or less	5% per hour or less

TABLE 3-1 INSTALLATION ENVIRONMENT REQUIREMENTS

Avoid the following temperature and humidity conditions. Otherwise, printed images may appear differently from what you expect and machine operation may be erratic or incorrect.

- Places where sudden changes in temperature or humidity are expected, even if the condition is within the range specified within this document.
- Places where direct sunlight or excessive lighting conditions are expected
- Places where air conditioners blow directly.

Impression Technology strongly recommends that the printer should be installed where air conditioning airflow, humidity and temperature can be adjusted easily.

5.6.10 Required Space

Install the printer on a flat surface that meets the following conditions:

- The load bearing surface will fully support the full weight of the printer (and/or stand) plus 100%.
- The load bearing surface has an angular difference from level by no more than 2 degrees.
- The load bearing surface is textured and firm enough to be considered a non-slip, hard surface.
- The load bearing surface will fully support lateral forces in all directions in excess of 100kg.

For printer options *7.3 "Options/Supplies List" p.157*

DTG M2 Printer dimensions are illustrated below

Do not use the DTG M series on unstable surfaces.

5.7 Minimum Computer Requirements

Ensure that your computer has the minimum specifications as recommended here to ensure optimum performance of your printer and the RIP:

Processor	Requires a PC based on Quad Core (2.2 GHz) technology or higher processor.
Operating System	Microsoft® Windows® XP or later.
Hard Disk	Hard Drive with SATA interface and 100 GB free disk space.
RAM	2GB DDR2 or more.
Monitor	SVGA or better with resolution of 800 x 600 or better. 16 Bits or more color support recommended.

5.8 Basic Operations

Some basic printer operations are described here as they are referred to in the Initial Setup instructions.

6. Switching the Printer ON*" p.25.* This will supply power to the WIMS system, allowing the cleaning fluid to circulate through the white ink lines & manifold and remove some trace white ink remaining after the White Ink discharge.
7. After several minutes, again remove power from the printer (☞ *3.5.2 "Switching the Printer OFF." p.31)*, to stop the WIMS circulation.
8. Empty the White ink container (the cleaning fluid will by now be contaminated with the residual white ink).
9. Repeat steps 1 - 4 above to further clean the white ink lines.

(4) Flush Cleaning Fluid through Ink Lines, Dampers & Print Head

1. Fill CMYK and White Ink containers with Cleaning Fluid.
2. Start the printer in Self-Diagnosis mode ☞ *5.5.1 "Powerful Head Cleaning" p.97*
3. Execute an "initial Ink Charge" ☞ *5.5.1 "Powerful Head Cleaning" p.97.* This will draw the Cleaning Fluid through the ink lines, and into the dampers and print head.
4. Repeat step 3 above as necessary until the ink lines are clear and the fluid being collected in the waste ink container is also clear.
5. Turn the printer off ☞ *3.5.2 "Switching the Printer OFF." p.31*

CAUTION

Monitor the level of waste ink in the Waste Ink Container – empty the Waste Ink Container as necessary in accordance with Section *5.4.6 "Emptying the waste ink container" p.96*

CAUTION

Monitor the level of cleaning fluid in each of the CMYK and white in containers, top up as necessary.

NOTE

Executing several consecutive Ink Charges may trigger the printer's internal waste ink counter. This is a self-protection mechanism to help remind the user to monitor & empty the waste ink container. If the waste ink counter is triggered during an Ink Charge, it will be evidenced by the printer appearing to "freeze" during the Ink Charge – it will display Charging on the display panel without the printer pump running for 30 seconds or more.

To reset the internal waste counter, it will be necessary to power the printer off (☞*3.5.2 "Switching the Printer OFF." p.31*) and then restart it in Normal mode (☞ *3.5.1 "Switching the Printer ON" p.29*). If it is necessary to continue the ink charge process, again turn the printer off, and restart it in the Self Diagnosis mode ☞ *5.5.1.1 "Accessing the Self-Diagnosis Menu" p.97*

NOTE

Refer to ☞ *3.6 "Initial Setup" p.43* for directions and instructions for re-loading inks to the printer.

5.9 Transportation of Printer

This section describes how to transport the printer.

Before transporting the printer, you must package it in the same manner as it was delivered using protective materials and packaging materials so that the printer will not be subject to excessive impact and vibrations during the transportation.

Follow the steps below to package the printer.

(1) Task Before Transportation

1. Remove all ink from the system and flush the ink container with cleaning fluid.
2. Fill containers with cleaning fluid and do ink purge from diagnostic menu.
3. Repeat until all lines are clean and ink free.
4. Turn off the printer during ink purge and empty the waste ink container.
5. Tape the carriage belt together in the centre with low tack tape.
6. Gently push the platen tray fully to the rear of the printer.
7. Tape the platen belt together at the front with low tack tape.
8. Tape the top cover closed with low tack tape.
9. Tape the ink containers and waste ink container in place with low tack tape.
10. Fit the printer with protective materials and place into container.
11. Screw the container lid down.

TIP

☞ If the optional stand is used, separate the printer from the stand

(2) Task After Transportation

1. Unpack, assemble, and remove all low tack tape and protective materials from the printer.
2. Ensure the correct amounts of ink are poured into the bulk ink containers
3. Plug the printer power cable in to the mains and turn the printer on.
4. Allow the printer to complete ink charge and become ready for operation.
5. Perform a standalone nozzle test print onto paper with the printer, do head cleans if needed.
6. Install the required printer drivers onto the host PC and connect the printer.
7. Confirm the printer and PC are communicating correctly then install the rip software.

6.Troubleshooting

6.1 Introduction

This chapter provides information on possible causes of machine errors/damage and recovery actions.

If the machine is malfunctioning and an error message is displayed on the operation panel, refer to *6.2 "Troubleshooting with Error Messages" p.118*. If the machine is malfunctioning but no error messages are displayed, refer to *6.3 "Troubleshooting Without Error Messages" p.133*

If cause of errors/damage and recovery actions are not found in this chapter, or the machine cannot restore to normal status, please contact the distributor from whom you purchased the product or our customer support center.

6.2 Troubleshooting with Error Messages

This section describes the messages displayed in normal operation and upon an error occurrence as well as how to correct the error.

The available messages are as follows.

Priority	*Message type*	*Contents*	*Reference*
1	Operation status	Displayed when the machine is operating normally.	☞ *6.2.1 "Operation Status" p.119*
2	Error with message	Displayed when an abnormal condition occurs during normal operation.	☞ *6.2.2 "Errors with Message" p.120*
3	Data error	Displayed when a data communication error occurs between PC and the machine.	☞ *6.2.3 "Data Errors" p.122*
4	Command error	Displayed when an abnormal condition occurs during analysis of PC commands.	☞ *6.2.4 "Command Errors" p.123*
5	Error requiring reboot	Displayed when a serious error critical to the machine operation occurs.	☞ *6.2.5 "Errors Requiring Reboot" p.124*

TABLE 6-1 ERROR MESSAGE TYPE

6.2.1 Operation Status

This section describes the message contents, check items, and recovery actions for normal operation.

TABLE 6-2 EVENTS AND CHECK ITEMS FOR OPERATION STATUS MESSAGES

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	Cover open	Error on panel display, printer will not print.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞***3.5.2 "Switching the Printer OFF." p.31*** ☞ ***3.3*** *"Error! Not a valid result for table."* ***p.25***
2	Set media	Error on panel display, printer will not print.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞***3.5.2 "Switching the Printer OFF." p.31*** ☞ ***3.3*** *"Error! Not a valid result for table."* ***p.25***
3	No media	Displayed in the following cases: When media is not seen. When printing finishes in cut media mode	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞***3.5.2 "Switching the Printer OFF." p.31*** ☞ ***3.3*** *"Error! Not a valid result for table."* ***p.25***

6.2.2 Errors with Message

This section describes the contents of errors with messages as well as the check items and recovery actions. These messages are displayed when an abnormal condition occurs while the machine is running.

Upon an occurrence of an error with message, the machine stops its operation at the same time.

In some instances, the error may be cancelled by removing the error causes. After that, the machine will restart its operation.

TABLE 6-3 SYMPTOMS AND CHECK ITEMS FOR ERRORS WITH MESSAGE

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	Media detection error	-	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	Media skew error	Media skew error is displayed	1. Wrong settings in panel control.	Check settings .	☞ *3.5.4 "Confirming Default Settings" p.34*
			2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
3	Warning: Waste fluid box full	Automatic Waste fluid reset failed.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

TABLE 6-3 SYMPTOMS AND CHECK ITEMS FOR ERRORS WITH MESSAGE

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
4	[KCMY] Ink Near End [KCMY] Ink End	Ink Count override failed.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
5	Warning: Ink tube life	Ink tube life has almost expired	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
6	Out of memory DIMM 64MB	Memory is insufficient for data analysis/ printing. Required memory size is displayed.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

6.2.3 Data Errors

This section describes the message contents of data errors as well as the check items and recovery actions. These errors are displayed when a communication error occurs between the PC and the machine.

Upon an occurrence of a data error, the machine stops its operation at the same time.

In some instances, the error may be cancelled by removing the error causes. After that, the machine will restart its operation.

TABLE 6-4 SYMPTOMS AND CHECK ITEMS FOR DATA ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	I 15-1 error command [ ]	-	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	I 15-2 error command [ ]	-			
3	I 15-3 error command [ ]	-			
4	I 05 error command [ ]	-			
5	I 07 error command [ ]	-			
6	I 11 error command [ ]	-			
7	I 12 error command [ ]	-			
8	I 13 error command [ ]	-			
9	I 14 error command [ ]	-			
10	I 16 error command [ ]	-			

NOTE

The square bracket pair in a message may contain the applicable command code.

6.2.4 Command Errors

This section describes the message contents of command errors as well as the check items and recovery actions.

These errors are displayed when an abnormal condition is found during analysis of PC command data.

Upon an occurrence of a command error, the machine stops its operation at the same time.

The error can be cancelled by removing the error causes. After that, the machine will restart its operation.

TABLE 6-5 SYMPTOMS AND CHECK ITEMS FOR COMMAND ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	MH 01 Error Command [ ]	Undefined command: Command being analyzed is not defined in applicable command mode.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again. Re-start computer. Re-send print instruction, check if message appears. 2. Confirm USB ports on computer are functioning correctly. 3. Change USB data cable between computer & printer	If message appears: Refer to action in check item No. 2 If message appears: Refer to action in check item No. 3 If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	MH 02 Error Command [ ]	Parameter error: Number of parameters following command is inappropriate			
3	MH 03 Error Command [ ]	Numeral value error: Number of parameters following command is inappropriate			
4	MH 04 Error Command [ ]	Undefined character set: Unknown character set is present.			
5	MH 07 Error Command [ ]	Buffer overflow: Polygon buffer or downloadable character buffer overflows.			

NOTE

- The square bracket pair in a message may contain the applicable command code.
- For the PC settings, refer to your PC's operation manual.

6.2.5 Errors Requiring Reboot

This section describes the contents of reboot-requiring errors as well as the check items and recovery actions. These errors are issued when any of the following critical problems occurs.

- Obstacle that prevents the machine's operation
- Damage of electric circuits (boards, motors, sensors)
- Abnormal operation of control programs

When any of the above conditions occurs, the machine follows the steps shown below before stopping its operation.

1. Turn OFF the driving system power automatically.
2. Flash all lamps in the operation panel and generate intermittent audible alarm.
3. Display the applicable error message on the LCD.

The error can be cancelled by removing the error causes and restarting the machine.

(1) CPU system serious error

TABLE 6-6 SYMPTOMS AND CHECK ITEMS FOR CPU SYSTEM SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	E 001 error DRAM	Standard DRAM error: Abnormal condition in standard memory mounted on main board assembly	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

TABLE 6-6 SYMPTOMS AND CHECK ITEMS FOR CPU SYSTEM SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
2	E 016 error CPU Err [00]	Interruption exception error: Abnormal condition in interruption process.	1. Check AC power supply and printer surrounding equipment. 2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
3	E 016 error CPU Err [02]	Command border exception/TLB exception (load or command fetch) error: Abnormal condition in command border. Or TLB exception in data load or command fetch.			
4	E 016 error CPU Err [03]	Data border exception/TLB exception (store) error: Abnormal condition in data border. Or TLB exception in data storing.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
5	E 016 error CPU Err [04]	Address exception error (load or command fetch): Address error in command load or fetch.			
6	E 016 error CPU Err [05]	Address exception error (store): Address error in saving process.			

TABLE 6-6 SYMPTOMS AND CHECK ITEMS FOR CPU SYSTEM SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
7	E 016 error CPU Err [06]	Address exception error (command fetch): Address error in command loading or storing	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
8	E 016 error CPU Err [07]	Bus exception error (load or store): Bus error in command loading or storing			
9	E 016 error CPU Err [08]	System call exception error: Abnormal condition in system call			
10	E 016 error CPU Err [09]	Break point exception error: Abnormal condition in break point			
11	E 016 error CPU Err [10]	Reserved command exception error: Abnormal condition in reserved command			
12	E 016 error CPU Err [11]	Coprocessor disabled exception error: Abnormal condition in coprocessor			

TABLE 6-6 SYMPTOMS AND CHECK ITEMS FOR CPU SYSTEM SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
13	E 016 error CPU Err [12]	Arithmetic overflow exception error: Overflow occurs	1. Check AC power supply and printer surrounding equipment. 2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
14	E 016 error CPU Err [13]	Trap exception error: Trap occurs			
15	E 016 error CPU Err [15]	Floating point exception error: Abnormal condition in floating point process			
16	E 016 error CPU Err [22]	Watch exception error: Abnormal condition in watch			
17	E 016 error CPU Err [32]	Watchdog time-out exception error: Time-out in watchdog			
18	E 016 error CPU Err [33]	Abort error: Process aborted			
19	E 237 error Transfer memory	Transfer memory error: Abnormal condition in transfer of analyzed printer data.			
20	E 129 error NVRAM	Abnormal condition in NVRAM in main board assembly that memorises product settings	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

NOTE

For the PC settings, refer to your PC's operation manual.

(2) Mechanical Serious Errors

TABLE 6-7 SYMPTOMS AND CHECK ITEMS FOR MECHANICAL SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
1	E 065 error X motor	Abnormal condition in PF motor (X-axis) during printer operation. Displayed if the difference between motor command value and feedback from encoder is large.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	E 067 error X encoder	Abnormal condition in media feed amount (X-axis) during printer operation. Displayed if there is no feedback from encoder.			
3	E069 error X time-out	Time-out condition in media feed amount (X-axis) during printer operation. Displayed if pressure roller does not reach the defined position.			

TABLE 6-7 SYMPTOMS AND CHECK ITEMS FOR MECHANICAL SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
4	E071 error X Overcurrent	Overload condition in PF motor (X-axis) during printer operation.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
5	E079 error X2 overcurrent				
6	E 066 error Y motor	Abnormal condition in CR motor (Y- axis) during printer operation. Displayed if the difference between motor command value and feedback from encoder is large.			
7	E 068 error Y encoder	Abnormal condition in head travel distance (Y-axis) during printer operation. Displayed if there is no feedback from encoder.			

TABLE 6-7 SYMPTOMS AND CHECK ITEMS FOR MECHANICAL SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
8	E 070 error Y time-out	Time-out condition in head travel distance (Y-axis) during printer operation. Displayed if carriage does not reach the defined position.	1. Check if CR Encoder Strip is contaminated or worn out.	If grease or dust collect: Wipe strip with a dry cloth. If ink deposit presents: Wipe it off with cloth dampened with neutral detergent. If contamination or deposit is too heavy: Replace CR Encoder Strip.	☞ *5.5.2 "Clean the CR Encoder Strip" p.101*
9	E 072 error Y overcurrent	Overload condition in CR motor (Y-axis) during printer operation.	2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
10	E080 error Y2 overcurrent				
11	E 073 error Y origin	CR_HP detection is not possible.	3. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
12	E 074 error cover	Abnormal condition in cover sensor.			
14	E 075 error H overcurrent	Abnormal condition in print head during printer operation due to overload.			
15	E 077 error H overheat	Abnormal condition in head driver.			
16	E 078 error H cable	Abnormal condition in head cable or head thermistor.			

TABLE 6-7 SYMPTOMS AND CHECK ITEMS FOR MECHANICAL SERIOUS ERRORS

No.	*Message*	*Event/ Symptom*	*Check item*	*Action*	*Reference*
17	E 097 error NVRAM	Abnormal condition in NVRAM.	4. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
18	E 161 error Y life	Carriage motor has reached the end of life.			

6.3 Troubleshooting Without Error Messages

This section describes the symptoms of errors without an error message as well as the check items and recovery actions.

6.3.1 Initial Operation Problems

TABLE 6-8 CHECK ITEMS AND ACTIONS FOR INITIAL OPERATION PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
1	Machine power cannot be turned ON	1. Is emergency stop switch engaged?	Disengage the emergency stop switch	☞ *3.5.1 "Switching the Printer ON" p.29*
		2. Is the power cord connected to the socket at the rear of the printer?	Connect the power cord to the socket at the rear of the printer	☞ *3.5.1 "Switching the Printer ON" p.29*
		3. Is the power cord connected to the wall socket for mains power? Is the mains power switch at wall socket ON?	Connect the power cord to the wall socket for mains power. Ensure mains power switch is ON.	☞ *3.5.1 "Switching the Printer ON" p.29*
			Contact your authorized DTG Distributor or Technician for further assistance	
2	Abnormal LCD operation (no displays/garbled characters)	1. Check power supply voltage (AC110VAC or 220VAC depending on country).		
		2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the display is still abnormal: Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
3	Initial ink charge not available	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same status.	Contact your authorized DTG Distributor or Technician for further assistance	☞*3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

TABLE 6-8 CHECK ITEMS AND ACTIONS FOR INITIAL OPERATION PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
4	Though initial charge has started, ink does not reach head.	1. Are tube clamps on ink tubes properly released?	Release tube roller clamps from ink tubes	☞ *3.6.2 "Initial Ink Fill Process - Colours" p.44*
5	Though Ink reaches head, ink is not discharged from head.	1. Is capping position appropriate?	If ink inflow is confirmed, execute initial ink charge.	☞ *5.5.1 "Powerful Head Cleaning" p.97*
6	Ink is not discharged though ink charge is finished.	1. Are damper assembly, ink tube / damper connectors (K, Y, M, C), manifold /tube connectors securely tightened? Is O-ring properly installed?	Check damper and manifold assemblies. If ink inflow is confirmed, execute initial ink charge.	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		2. Does shield part of damper assembly have air leak?	Replace damper assembly and check if cleaning operation causes ink inflow. If ink inflow is confirmed, execute initial ink charge.	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		3. Is waste ink tube from ink system assembly bent / blocked / kinked	Check for and release kink / bend in waste tube from ink system assembly (via waste ink compartment) If ink inflow is confirmed, execute initial ink charge	☞ *5.5.1 "Powerful Head Cleaning" p.97*
			Contact your authorized DTG Distributor or Technician for further assistance	
7	Machine makes no operations after turned ON.	2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if the same message appears.	If the message appears: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*

TABLE 6-8 CHECK ITEMS AND ACTIONS FOR INITIAL OPERATION PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
8	After turned ON, machine displays “initializing” and resets itself	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
9	Machine does not perform initialization.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
10	Machine does not stop.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
11	Operation panel accepts no inputs	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
12	Machine prints nothing though it receives data	2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ ☞ *3.5.1 "Switching the Printer ON" p.29*

6.3.2 Printing Problems

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
1	Media feed after printing is excessive	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	Missing dots in printing.	1. Perform cleaning twice consecutively.		☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41*
		2. Is ink tube filled with ink?	Perform initial ink charge.	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		3. Perform “Print:Nozzle Check of printer self-diagnosis or “Test Print”	If the nozzle check patterns are printed correctly, refer to the action in check item No. 4.	☞ *3.6.6 "Performing a Nozzle Check Test Print" p.53*
		4.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
3	Blocked nozzles or ink drops not eliminated even after cleaning	1. Check cleaning wiper condition	Clean the cleaning wiper in accordance with ***Section 5.4.3 "Cleaning the Wiper and Head Cap" p.93.*** After cleaning the cleaning wiper, perform cleaning twice consecutively. If cleaning wiper is sticky with ink, replace it with a new one	☞ ***5.4.3 "Cleaning the Wiper and Head Cap" p.93.***
		2. Is nozzle face wiped/rubbed correctly?	Check wiper installation condition and secure it correctly.	
		3. Does residual ink collect on print head assembly or in nozzles?	Clean head as follows. Clean head Perform initial ink charge Check printouts again	☞ ***3.5.5 "Performing a Head Clean from the Operation Panel" p.41*** ☞ ***5.5.1 "Powerful Head Cleaning" p.97***
		4. Is waste ink tube from ink system assembly bent / blocked / kinked	Check for and release kink / bend in waste tube from ink system assembly (via waste ink compartment) and check if cleaning operation causes ink inflow If ink inflow is confirmed, execute initial ink charge	☞ ***5.5.1 "Powerful Head Cleaning" p.97***
		5.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
4 5	No printing Particular color is missing	1. Follow check items and actions for symptom #3 *(Blocked nozzles or ink drops not eliminated even after cleaning)* above		
		2. Are damper assembly, ink tube / damper connectors (K, Y, M, C), manifold /tube connectors securely tightened? Is O-ring properly installed?	Check damper and manifold assemblies	
		3. Does shield part of damper assembly have air leak?	Replace damper assembly and check if cleaning operation causes ink inflow. If ink inflow is confirmed, execute initial ink charge.	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		4.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
6	Machine outputs all solid colour printing.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
7 8 9 10	Blocky printing quality. Blocky image printing. CR line seems dotted. Missing lines in printed output. (no missing or ink crooking in step patterns in location 1G-7G in "Test Print")	1. Is working environment appropriate?	Use machine under specified environment.	☞ *3.3.1 "Installation Environment Requirements" p.25*
		2. Have you started printing immediately after initial charge?	Printing just after initial charge may cause following symptoms. Printed line blurs Missing lines in print In such cases, perform cleaning two or three times and check printout again. If symptoms remain even after cleaning, leave machine unused for 1 hour or more. The perform cleaning again and check printout.	☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41*
		3. Check cleaning wiper condition	Clean the cleaning wiper in accordance with *Section 5.4.3 "Cleaning the Wiper and Head Cap" p.93.* After cleaning the cleaning wiper, perform cleaning twice consecutively. If cleaning wiper is sticky with ink, replace it with a new one	☞ *5.4.3 "Cleaning the Wiper and Head Cap" p.93.*

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
7 8 9 10		4. Is nozzle face wiped/rubbed correctly?	Check wiper installation condition and secure it correctly.	
		5. Is CR encoder strip contaminated?	If grease or dust collect: Wipe strip with a dry cloth. If ink deposit presents: Wipe it off with cloth dampened with neutral detergent. If contamination or deposit is too heavy: Replace CR Encoder Strip.	☞ *5.5.2 "Clean the CR Encoder Strip" p.101*
		6. Is waste ink tube from ink system assembly bent / blocked / kinked	Check for and release kink / bend in waste tube from ink system assembly (via waste ink compartment) and check if cleaning operation causes ink inflow If ink inflow is confirmed, execute initial ink charge	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		7. Does residual ink collect on print head assembly or in nozzles?	Clean head as follows. Clean head Perform initial ink charge Check printouts again	☞ *3.5.5 "Performing a Head Clean from the Operation Panel" p.41* ☞ *5.5.1 "Powerful Head Cleaning" p.97*
		8.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
11	Printout borders blur	1. Does powerful cleaning correct symptom?	Perform powerful cleaning twice consecutively	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		2. Is the media height set correctly.	Set the media height	☞ *3.6.5 "Checking media height" p.51*
		3.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	
13 14 15	Many satellites (Unnecessary dots) Shaggy printout Uneven lines (printed with stains)	1. Is working environment appropriate?	Use machine under specified environment.	☞ *3.3.1 "Installation Environment Requirements" p.25*
		2. Is CMYK ink pressure sufficient? Is ink pressure alarm sounding?	Ensure all ink bottle lids are secured tightly	
		3. Does powerful cleaning correct symptom?	Perform powerful cleaning twice consecutively	☞ *5.5.1 "Powerful Head Cleaning" p.97*
		4. Perform test printing.	If nozzle check patterns are printed correctly, refer to check item 6.	☞ *3.6.6 "Performing a Nozzle Check Test Print" p.53*
		5. Have you started printing immediately after initial charge?	Be sure to wait at least 1 hour after initial ink charge. Print before ink charge stabilization will not provide adequate printing quality	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
13 14 15		6. Check cleaning wiper condition	Clean the cleaning wiper in accordance with ***Section 5.4.3 "Cleaning the Wiper and Head Cap" p.93.*** After cleaning the cleaning wiper, perform cleaning twice consecutively. If cleaning wiper is sticky with ink, replace it with a new one	☞ ***5.4.3 "Cleaning the Wiper and Head Cap" p.93.*** ☞ ***3.5.5 "Performing a Head Clean from the Operation Panel" p.41***
		7. Is nozzle face wiped/rubbed correctly?	Check wiper installation condition and secure it correctly.	
		8. Is waste ink tube from ink system assembly bent / blocked / kinked	Check for and release kink / bend in waste tube from ink system assembly (via waste ink compartment) and check if cleaning operation causes ink inflow If ink inflow is confirmed, execute initial ink charge	☞ ***5.5.1 "Powerful Head Cleaning" p.97***
		9. Does residual ink collect on print head assembly or in nozzles?	Clean head as follows. Clean head Perform initial ink charge Check printouts again	☞ ***3.5.5 "Performing a Head Clean from the Operation Panel" p.41*** ☞ ***5.5.1 "Powerful Head Cleaning" p.97***
		10.	If the symptom persists: Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS				
No.	***Symptom***	***Check Item***	***Action***	***Reference***
16	Mixed color lines are not overlaid.	1. Are Bi-Directional printing positions aligned correctly?	Align Bi-Directional printing positions.	☞ ***3.6.8 "Bi-Directional (Bi-D) Adjustment" p.56***
		2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞***3.5.2 "Switching the Printer OFF." p.31*** ☞ ***3.5.1 "Switching the Printer ON" p.29***
17	Black and other colors do not align.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞***3.5.2 "Switching the Printer OFF." p.31*** ☞ ***3.5.1 "Switching the Printer ON" p.29***
18	White Ink layer is not “thick” enough	1. Had pre-treatment been applied properly? (sufficient pre-treatment, even spray, garment pressed heavily enough, etc.)	Pre-treatment application is subject to the variables of the user & user equipment. Use the guidelines provided within this manual to develop your own comfortable and successful method for pre-treatment of garments for white ink printing	☞ ***4.3 "Garment Preparation" p.82***
		2. Are all white ink nozzles printing?	Perform Nozzle Check Test Print. Follow check items and actions for symptoms #3, 4 & 5 *(Blocked nozzles or ink drops not eliminated even after cleaning & Particular color is missing)* above	☞ ***3.6.6 "Performing a Nozzle Check Test Print" p.53***
		3. White Ink settings in RIP not set correctly		☞ ***refer to RIP software user guide***

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
18	White Ink layer is not “thick” enough	4. WIMS filter blocked	Change WIMS filter.	☞ *5.6.4 "Replace WIMS filter" p.107*
19	Poor accuracy of segment length in head travel direct (main scan direction).	5. Is working environment appropriate?	Use machine under specified environment.	☞ *3.3.1 "Installation Environment Requirements" p.25*
		6. Is CR encoder strip contaminated?	If grease or dust collect: Wipe strip with a dry cloth. If ink deposit presents: Wipe it off with cloth dampened with neutral detergent. If contamination or deposit is too heavy: Replace CR Encoder Strip.	☞ *5.5.2 "Clean the CR Encoder Strip" p.101*
		2. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
		1. Is working environment appropriate?	Use machine under specified environment.	☞ *3.3.1 "Installation Environment Requirements" p.25*

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
20	Poor linearity in media feed direction (media splicing accuracy).	1. Are Bi-Directional printing positions aligned correctly?	Align Bi-Directional printing positions.	☞ *3.6.8 "Bi-Directional (Bi-D) Adjustment" p.56*
		2. Is CR encoder strip contaminated?	If grease or dust collect: Wipe strip with a dry cloth. If ink deposit presents: Wipe it off with cloth dampened with neutral detergent. If contamination or deposit is too heavy: Replace CR Encoder Strip.	☞ *5.5.2 "Clean the CR Encoder Strip" p.101*
		3.	Contact your authorized DTG Distributor or Technician for further assistance	
21	Images print “out of registration” between white & colour layers	1. Are print settings in the RIP correct?	Refer to the RIP User Guide for correct settings	
		2.	Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
22	Nothing happens when you send a print job from the computer	1. Is the printer turned on?	Disengage the emergency stop switch Connect the power cord to the socket at the rear of the printer and to the wall socket for mains power Ensure mains power switch is ON	☞ *3.5.1 "Switching the Printer ON" p.29*
		2. Message or Error on the Control Panel	Check for message or error display on the control panel.	
		3. Is the printer connected to the computer via USB cable?	Check USB cable connection	☞ *3.5.3.2 "Connecting USB interface cable" p.33*
		4. Observe Check Items for Symptom # 23 *"USB interface cannot establish communication"* below		
		5. Error with RIP program	Check error message in RIP, resolve according to RIP User Guide	☞ *refer to RIP software user guide / computer user guide*
		6.	Contact your authorized DTG Distributor or Technician for further assistance	
23	USB interface cannot establish communication.	1. Does computer in use support USB?	Windows 95 does not support USB officially. Recommended operating system Windows XP or higher	-
		2. Does the same error occur even if you use another USB port on the computer?	Use another USB port on the computer	-

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS				
No.	***Symptom***	***Check Item***	***Action***	***Reference***
23	USB interface cannot establish communication.	3. Are you using USB hub?	Cascade connection using USB hub is available up to 5 stages. If the printer operates normally without the USB hub, replace USB hub. Use USB hubs compliant with USB2.0 Hi-Speed standard.	-
		4. Attempt communication with using another PC on hand.	Replace USB cable.	-
		5. Does the same error occur even if interface cable is changed?	Communication error may be caused by an open circuit in interface cable or too long cable length. Use cables compliant with USB 2.0 Hi-Speed standard	-
		6. Printer driver may be defective	Update printer driver	☞ *3.6.9.2 "Installing the Printer Driver (for USB connection)" p.71*
		7.	Contact your authorized DTG Distributor or Technician for further assistance	
24	Printing position is incorrect	1. Are settings from RIP software correct?	Check RIP software settings	☞ *refer to RIP software user guide*
		2. Printer driver may be defective	Update printer driver	☞ *3.6.9.2 "Installing the Printer Driver (for USB connection)" p.71*
		3.	Contact your authorized DTG Distributor or Technician for further assistance	

TABLE 6-9 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PRINTING PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
25	Some data are not printed. Some data prints as "garbage"	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.		☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
		2. Re-start RIP program / computer		☞ *refer to RIP software user guide / computer user guide*
		3. Printer driver may be defective	Update printer driver	☞ *3.6.9.2 "Installing the Printer Driver (for USB connection)" p.71*
		4. Is CR encoder strip contaminated?	If grease or dust collect: Wipe strip with a dry cloth. If ink deposit presents: Wipe it off with cloth dampened with neutral detergent. If contamination or deposit is too heavy: Replace CR Encoder Strip.	☞ *5.5.2 "Clean the CR Encoder Strip" p.101*
		5. Observe Check Items for symptom #23 *(USB interface cannot establish communication)* above.		
		6.	Contact your authorized DTG Distributor or Technician for further assistance	

6.3.3 Noise Problems

TABLE 6-10 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR NOISE PROBLEMS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
1	Abnormal noise in waiting mode	1. Are there any foreign objects or obstacles at noise-generating position?	Remove obstacles and foreign objects.	-
		2. Is abnormal noise heard from within the machine?	Contact your authorized DTG Distributor or Technician for further assistance	
2	Abnormal noise is heard while head is moving laterally.	1.	Contact your authorized DTG Distributor or Technician for further assistance	
3	Beeper sound is heard from right side of printer.	1. Is Pressure Status Light red?	Check CMYK ink bottle lids to ensure they are tight. Check for air leaks or lack of seal in the air lines/ink bottles.	
		2. Is pressure status light green	Contact your authorized DTG Distributor or Technician for further assistance	

6.3.4 Problems with Curing / Washing

TABLE 6-11 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PROBLEMS WITH CURING / WASHING

No.	*Symptom*	*Check Item*	*Action*	*Reference*
1	Prints lose too much vibrancy after curing	1. Too high a polyester content in fabric, particularly with white ink prints	Best results are achieved with 100% cotton fabric Garments requiring white ink should have only a low (<35%) polyester content CMYK only prints on high polyester content fabric will require a specialized fabric coating / pre-treatment	-
		2. Too much / insufficient pressure on the heat press	When curing the garment in a heat press, the press should be placed firmly over the garment & protective sheet (parchment paper / Teflon sheet)	☞ *4.6 "Post-Printing" p.86*
		3. Temperature on heat press is too high	Check the accuracy of the heat press temperature. Follow the temperature and curing guidelines outlined in this manual	☞ *4.6 "Post-Printing" p.86*
		4. Dirty / damaged protective sheet used during curing	Teflon sheet should be washed with soapy water periodically. Use a dedicated sheet for pressing of pre-treated garment and another for curing of printed garment. Replace damaged protective sheet. Replace parchment sheets regularly.	

TABLE 6-11 SYMPTOMS, CHECK ITEMS AND ACTIONS FOR PROBLEMS WITH CURING / WASHING				
No.	***Symptom***	***Check Item***	***Action***	***Reference***
2	Prints peel or rub off, wash out or fade after only a few washes	1. Too high a polyester content in fabric, particularly with white ink prints	Best results are achieved with 100% cotton fabric Garments requiring white ink should have only a low (<35%) polyester content CMYK only prints on high polyester content fabric will require a specialized fabric coating / pre-treatment	
		2. Too much pre-treatment / improper pre-treatment of garment.	Adjustment method for application of pre-treatment.	☞ ***4.3 "Garment Preparation" p.82***
		3. Too much / insufficient pressure on the heat press	When curing the garment in a heat press, the press should be placed firmly over the garment & protective sheet (parchment paper / Teflon sheet)	☞ ***4.6 "Post-Printing" p.86***
		4. Temperature on heat press too high or too low	Check the accuracy of the heat press temperature. Follow the temperature and curing guidelines outlined in this manual	☞ ***4.6 "Post-Printing" p.86***
		5. Improper wash settings	Printed garments should be washed in cold water (garment turned inside-out). Delicate dryer settings.	

6.3.5 Other Problems

TABLE 6-12 SYMPTOMS, CHECK ITEMS AND ACTIONS

No.	*Symptom*	*Check Item*	*Action*	*Reference*
1	Machine hangs up.	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
2	Machine power is shut off during printing	1. Turn machine OFF. Disconnect mains power, wait 5 minutes. Turn it ON again and check if symptom is repeated.	If the symptom is repeated: Contact your authorized DTG Distributor or Technician for further assistance	☞ *3.5.2 "Switching the Printer OFF." p.31* ☞ *3.5.1 "Switching the Printer ON" p.29*
3	Ink spills out of waste fluid container	1. Has waste fluid container been emptied (daily)	Empty waste fluid container.	☞ *5.4.6 "Emptying the waste ink container" p.96*
		2.	Contact your authorized DTG Distributor or Technician for further assistance	
4	Ink spills out of flushing box.	1. Is flushing box clogged with dust / dried ink	Remove dust. Flush flushing box with cleaning solution.	☞ *5.4.2 "Cleaning the Flushing Tray" p.92*
		2.	Contact your authorized DTG Distributor or Technician for further assistance	
5	Ink spills around carriage rail.	1.	Contact your authorized DTG Distributor or Technician for further assistance	

7.Appendix

7.1 Product Specifications

7.1.1 Main Unit Specifications

Item		*Specifications*	
Model name		M 2	M4
Printing method		Drop on-demand piezo	
Motor driving method		Firmware servo/DC motor drive	
Media feeding method		Fixed meshed gear and toothed belt	
Media fixing method		ACCULOK platen alignment and anchor system	
Media supply and ejection	Media load	Front left push button for loading	
	Media eject	Front left push button for ejecting	
Media type		Cotton, Poly cotton blend fabrics with <1mm surface deviation	
Maximum loadable media length		440 mm / 17.5 inches	885mm / 35 inches
Maximum loadable media width		600mm / 24 inches	600 mm / 24 inches
Platen bed height adjustment		Approximately 25mm (1 inch) variable	

TABLE 7-1 MAIN UNIT SPECIFICATIONS

7.1.2 Print Operation Specifications

Print direction	*Bidirectional*	*Bidirectional*	*Bidirectional*	*Bidirectional*	*Bidirectional*
Ink skinning time	<30 sec.	<30 sec.	<30sec.	<30sec.	<30sec.
Platen gap	Auto set	Auto set	Auto set	Auto set	Auto set
Print image					
Wave	none	none	none	none	none
Print image size					
Print resolution	-	720 × 720dpi	1440 × 720dpi	720 × 1440dpi	1440 × 1440dpi

TABLE 7-2 PRINT OPERATION SPECIFICATIONS

7.1.3 Printer physical specifications

Item		*Specifications*	
CPU		64Bit RISC CPU	
Memory		128MB	
Command		MH-GL, MH-GL2, MH-RTL (RTL-PASS)	
Interface		• USB (USB 1.1/2.0 is supported) • Network Interface (IEEE802.3)	
Ink supply	White	W W W W Tube supply via pump from stirred bulk ink container	
	Colour	C M Y K Tube supply from pressurised bulk ink containers	
Head life expectancy		2 billion dots per nozzle (discharging ink at an operating temperature of 25ºC (77F) with no dust)	
Environmental conditions		*Temperature*	*Humidity*
Operation environment		18ºC (64F) to 30ºC (86F)	20% to 80%, with no condensation
Printing accuracy warranty range		18ºC (64F) to 28ºC (82.4F)	40% to 60%, with no condensation
Rate of change		2ºC/hour or less	5%/hour or less
Storage environment	Without ink	-10ºC (14F) to 60ºC (140F)	5% to 85%, with no condensation
	With ink	18ºC (64F) to 30ºC (86F)	20% to 85%, with no condensation
Power source	Voltage	AC 90 - 132V or AC 200 – 240V	
	Frequency	50Hz/60Hz ±1Hz	
Approximate Power consumption	During Printing	240W or less	
	During standby	80W or less	
Approximate Outer Dimensions	Height	352 mm (13.9 in.) * with stand section: 983mm (38.7 in.)	
	Width	1300 mm (51.2 in.)	
	Depth	550 mm (21.5 in.)	
Approximate Weight	Main body	93.0 kg (205 lb.)	
	Stand	25.0 kg (55 lb.)	

TABLE 7-3 PRINTER PHYSICAL SPECIFICATIONS

7.2 Interface Specifications

This section explains the specification of the interfaces supported for this printer.

7.2.1 USB Interface Specifications

Item	*Specifications*
Interface	Universal Serial Bus Specifications Revision 2.0 Universal Serial Bus Device Class Definition for Plotting Devices Version 1.1
Data format	NRZI
Transmission speed	11Mbps (USB1.1) / 480Mbps (USB2.0)
Applicable connector	USB Series B
Allowable cable length	3 meters (9.8 foot) absolute maximum.

TABLE 7-4 USB INTERFACE SPECIFICATIONS

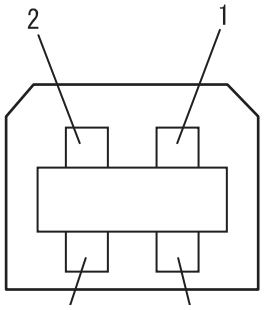


FIGURE 7-1 USB INTERFACE PIN CONFIG

Pin number	*Signal name*	*Input/output*	*Function*
1	VCC	-	Cable power supply
2	- Data	Bidirectional	Data
3	+ Data	Bidirectional	Data
4	Ground	-	Cable ground

TABLE 7-5 USB INTERFACE PIN / SIGNAL / FUNCTION

7.2.2 Network Interface Specifications

Item	*Specifications*
Network type	Ethernet IEEE802.3
Network I/F	10BASE-T / 100BASE-TX Auto-switching (RJ-45 connector twist pair cable) MDI / MDI-X Auto-switching
Corresponding protocol	TCP/IP, ARP, RARP, ICMP

TABLE 7-6 NETWORK INTERFACE SPECIFICATIONS

7.3 Options/Supplies List

7.3.1 Options

7.3.1.1 Stand

Name	*Model*	*Sales units*
Optional stand for DTG M series	DTG M2	1 box (includes one unit)

TABLE 7-7 STAND OPTIONS

7.3.1.2 Other Options

Name	*Model*	*Sales units*
Sleeve platen	DTG M2 / M4	1 box (includes one unit)
Youth platen	DTG M2 / M4	1 box (includes one unit)
Hat Platen	DTG M2 / M4	1 box (includes one unit)
Adult platen	DTG M2 / M4	1 box (includes one unit)
Toddler platen	DTG M2 / M4	1 box (includes one unit)

TABLE 7-8 OTHER OPTIONS

TIP

All options and supplies list above and below are designed specifically for DTG M series printer use.

7.3.2 Supplies

NOTE

For more information about the following items, contact your local dealer:

- DTG special textile ink
- DTG Pre-treat or under base

- DTG Cleaning fluid
- DTG Cleaning swatches
- DTG Cleaning swabs

- Wiper blade
- WIMS filter

- Replacement silicone tubing

- Replacement white ink pump tube

CAUTION

Problems with printer operation may occur if cleaning products, media or inks other than those recommended are used with the printer.