



SlideMate AS

Operator Guide

A83910100 Issue 7 April 2021

Product codes:

A83900001, A83900002,
A83900004, A83900005,

Our mission is to improve lives by enhancing cancer diagnostics.

To every one of us at EpreDia, this mission is personal. Many of us have loved ones and family who have been affected by cancer.

You are on the front line of this fight, and our pledge is to arm you with the most innovative tools to enable early detection and diagnosis of this disease.

Learn more at epredia.com



Company Information

© Copyright 2021. Pyramid Innovation Ltd. All rights reserved.
Pyramid Innovation Ltd is an ISO 9001:2008 Accredited Company.

All other trademarks are the property of Pyramid Innovation Ltd and its subsidiaries

Pyramid Innovation Ltd makes every endeavour to ensure that the information contained in its support documentation is correct and clearly stated but does not accept responsibility for any errors or omissions. The development of Pyramid Innovation Ltd products and services is continuous. Make sure that any published information that you use for reference is up to date and relates to the status of the product. If necessary, check with Pyramid Innovation Ltd or your local Pyramid Innovation Ltd representative.

This manual may not, in whole or in part, be copied, photocopied, reproduced, translated, or converted to any other electronic or instrument readable form without prior written consent of Pyramid Innovation Ltd.

All information contained in this manual is proprietary and confidential, and the exclusive property of Pyramid Innovation Ltd. This manual is protected by copyright and any reproduction is prohibited. This manual is for use only by the individuals to whom it has been made available by Pyramid Innovation Ltd.

Contact address



Pyramid Innovation Ltd
Unit E4 Chaucer Business Park, Dittons Road,
Polegate, East Sussex, BN26 6QH, UK

Tel: +44 (0) 1323 406650
Web: www.pyramidinnovation.com

Distributor

Shandon Diagnostics Limited (Trading as Epredia)
Tudor Road, Manor Park, Runcorn
Cheshire, WA7 1TA, UK

Tel: +44 (0) 1928 534000
Fax: +44 (0) 1928 534001
Web: www.epredia.com



These instruments conform to the essential requirements of:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU

Symbols

The following symbols and conventions may be used throughout this document and on the instrument:



This symbol is used on the equipment, or in a document, to indicate that instructions must be followed for safe and correct operation. If this symbol appears on the instrument always refer to the operator guide.

This symbol is also used on the equipment, or in a document, to warn that harmful chemicals are used with the instrument. Refer to the material safety data sheets for the chemicals used. Always act with common sense and be aware of local laboratory procedures. Take suitable precautions.



Manufacturer

A warning is given in the documentation if there is a danger of personal injury or damage to equipment or samples.

Note

Notes give additional information about a job or instruction, but do not form part of the instruction.

Contents

Company Information	3	Installation of New Printer Software	24
Symbols	3	Cleaning the Print Head.....	26
Contact address	3	Print Head Recovery Process.....	26
Distributor	3	Routine Maintenance.....	27
Contents	4	Chapter 3 – Basic Operation	28
Safety Information	6	Basic Operation.....	28
Introduction	6	Main User Interface	29
General Safety	6	Main User Interface with Slide Delivery System connected	30
Chemical Safety.....	7	Editing Label Field Data	31
Environment	7	Creating a Sequence of Slides	32
Warranty Statement.....	7	Creating a Protocol	33
Chapter 1 – Introducing SlideMate AS	8	Saving a Protocol	34
Introduction	8	Deleting a Protocol	35
Optional Slide Delivery System	9	Using the Touch Panel Administration Configuration Menus	35
Connecting the Slide Delivery System.....	10	Network	36
Identification of Parts	11	General Menu.....	37
System Specifications.....	12	Printer	38
Chapter 2 – Installation and Setup	13	Hopper Settings	39
Installation and Setup	13	Data	40
Unpacking	14	Object Hierarchy	43
Locating the SlideMate AS.....	15	Chapter 4 – Advanced Operation	44
Electrical Connections and Start-Up Procedure	16	Items	44
Back Panel and Connections.....	16	Translators	48
Printer Status Indication.....	17	Templates	60
IQOQ Print Test Slide.....	18	Printing Images Using a Windows Printer	66
Print Quality Setup	19	Pi USB to Serial Com Port Driver.....	71
How to change heat settings.....	20	Paper Label Printer Replacement	72
Changing the Thermal Transfer Ribbon.....	21	Chapter 5 – Troubleshooting	73
Fitting the Thermal Transfer Ribbon Roll	22	Print Quality – Troubleshooting.....	73
Cleaning and Maintenance	23	Error Messages	77
		Troubleshooting Table.....	82

Appendices **83**

Appendix A – Consumables and Accessories	83
Appendix B – Repacking Instructions	84
Appendix C – Approved Slides	85

Appendix D – Icon Glossary	86
----------------------------------	----

Index **87**

Safety Information

Introduction

Epredia products are designed for convenient and reliable service; however, incorrect actions by a user may damage the equipment, or cause a hazard to health.

The following sections contain important information for the safe setup and use of the instrument.



The following sections contain important information for the safe setup and use of the instrument, and should be read and understood by the user before using the instrument.

General Safety



This instrument, as supplied, conforms to IEC 61010-1; however, the addition of chemicals introduces potential hazards. Good Laboratory Practice must be employed and consideration must be given to the potential for hazard when dealing with these chemicals.



- Do not remove any panels or access covers, unless specifically instructed to do so. The instrument does not have any user serviceable parts. Potentially lethal voltages are present inside the instrument.
- This instrument is only to be connected to the Mains Power Supply using the supplied power adapter and detachable mains lead. For replacement power adapter, ask your local distributor.
- The instrument must be positioned such that it is possible to interrupt the Mains supply at the source by removing the plug from the socket. This instrument must be properly connected to a good earth (ground) via the Mains Input Supply.
- Use only factory approved accessories or replacement parts within the instrument.
- If the equipment is used in a manner not specified by Epredia, the protection offered by the equipment may be impaired.
- All users must have read and understood the Operator Guide and these safety instructions; and only operate the unit in accordance with the instructions.
- Any problems and queries should be referred to your Epredia supplier.
- Correct maintenance procedures are essential for consistent performance. It is recommended that a Maintenance Contract is taken out with our Service Department.
- Any maintenance or service work required may only be carried out by trained personnel.
- The instrument should be placed on a suitable level surface and not in direct sunlight.
- Only use cleaning agents recommended in the Operator Guide.
- Check for any slides that may be jammed in the hopper or chute before pressing OK.

Chemical Safety

The introduction of chemicals creates potential hazards. Epredia has adopted the following position with regard to the subject of volatile chemicals used in laboratories:



- Do not use harmful chemicals or solvents to clean the instrument.
- The operator is fully aware of the contents of the specification documents detailing the properties of the chemicals they are using.
- The operator has carried out any legally required assessment of chemicals used and is using good laboratory practice.

Environment

This instrument is required to comply with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU. It is marked with the following symbol:



At the end of the product life it must be recycled in accordance with local regulations. It can be returned to a Municipal Collection Facility or to the retailer when a replacement is purchased. Where applicable this facility will be offered by the Product dealer.

Further information on Epredia compliance with these Directives, the recyclers in your country, and information on Epredia products which may assist the detection of substances subject to the RoHS Directive are available from your distributor.

Warranty Statement

Epredia is proud of their quality, reliability and of our after-sales service. We continuously strive to improve our service to our customers.

Please ask your distributor or Epredia representative about service contracts which can help maintain your instrument in an optimal operating condition.

Warranty provisions necessarily vary to comply with differences in national and regional legislation. Specific details can be found in the delivery documentation or from your dealer or representative.

Please note that your warranty may be invalidated if:

- This instrument is modified in any way, or not used as intended by Epredia.
- Accessories and reagents which have not been approved by Epredia are used.
- The instrument is not operated or maintained in accordance with instructions.
- The installation of the instrument was not conducted by a certified Epredia representative.

Chapter 1 – Introducing SlideMate AS

Introduction

The printer utilizes thermal print technology which requires a uniform and flat coated frosting on the slide. Print quality is dependent on the quality of the slides printing surface.

The printer is designed to print slides on-demand. It has built in software and barcode scanner enabling it to operate independently. The internal software provides the ability to design custom print templates. The scanner enables you to scan a barcode on a cassette and use that data to print slides. The display is similar to a tablet making it easy to edit and print slides via the touch screen.

The printer can be fitted with a slide delivery system or slides can be loaded manually. The optional delivery system is designed to enable individual slides to be loaded manually removing the need to remove the slide hopper.



- The writing surface should be at the top facing forward when loaded manually.
- If a slide is loaded upside-down it will be rejected.
- There is a gate at the top of the printer to prevent slides entering the mechanism when printing.
- The collection guide has a capacity of 10 slides.

The built-in software enables you to:

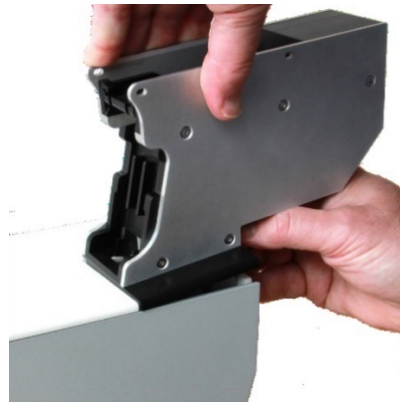
- Print individual slides.
- Create and print sequences of slides.
- Edit slide data.
- Change the template used to print slides.
- Design your own templates using different fonts and barcode types.
- Set fields to automatically increment.
- Setup templates to accept data from scanned barcodes or LIS input.
- Edit and delete slides within a sequence of slides.
- Print individual slides within a sequence of slides.
- Save a sequence of slides as a protocol to be used again.

Optional Slide Delivery System

The optional slide delivery system has removable hoppers with a capacity of 72 slides. It is designed to enable you to insert individual slides into the print without remove the hopper.

The delivery system can be easily fitted and removed from the printer, no tools are required. This enable the printer to continue to be used should the delivery system develop a fault.

The printer detects when a delivery system is fitted and the software provides additional features to automate the printer and delivery of slides (see Delivery System Manual for details).



- Holds 72 slides.

- Easy to fit with no tools required.



5.3.3.5

- Replaces the Input Guide on the top of the printer.
- Ability to manually insert a slide without removing the hopper.



Connecting the Slide Delivery System

The optional slide delivery system includes two additional cables.

- A power splitter cable, also called a Y-Cable.
- A communications cable with a mini-USB connector at each end.

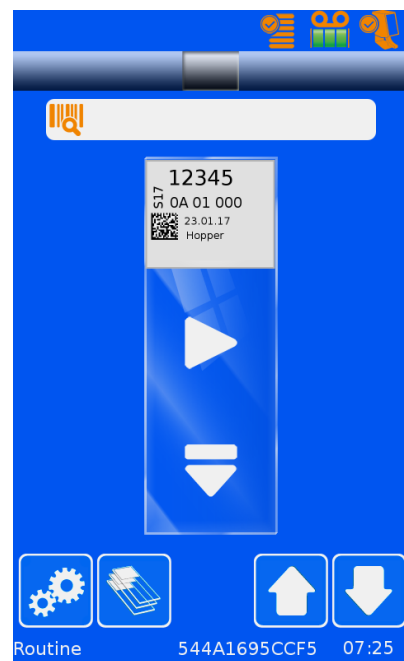
The cables that connect the slide delivery system to the printer should never be connected or disconnected with the power cable plugged into a mains outlet. Connecting and disconnecting either cable, can result in permanent damage to the slide delivery system electronics.

To connect the cables:

- Make sure the power cable is unplugged.
- Attach the slide delivery system to the top of the slide printer.
- Connect one end of the Y-Cable (male end) to the slide delivery system.
- Connect the remaining end of the Y-Cable (male end) to the slide printer.
- Connect one end of the communications cable to the slide delivery system mini-USB connection point.
- Connect the other end of the communications cable to the slide printer mini-USB connection point.
- Plug the power mains cable into the female end of the Y-Cable.

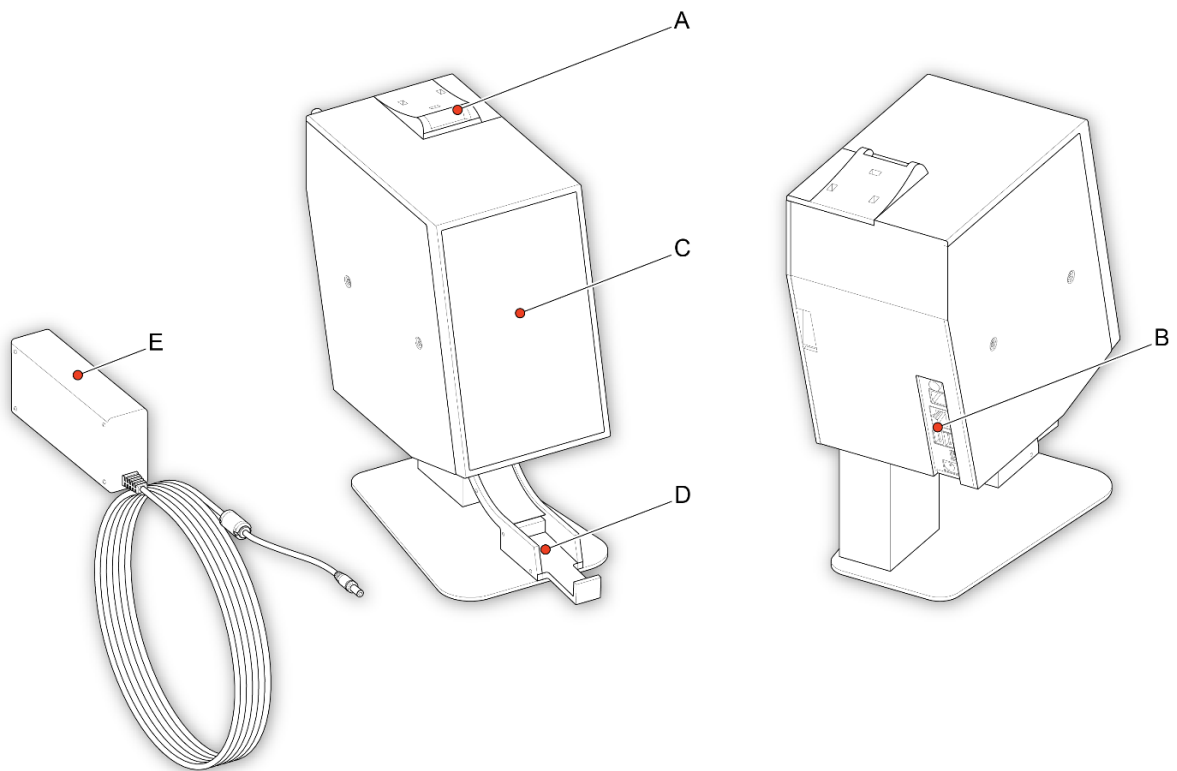
- When the slide printer powers up, you will see additional buttons on the main screen and in some settings menus that control operation of the slide printer and slide delivery system.

A **Play** button and an **Eject** button will be displayed within the clear part of the Microscope slide area.



Identification of Parts

The following diagrams identify the different components of the SlideMate AS.



- A Slide Input Guide
- B Connections and Power Input
- C Touch Display
- D Slide Collection Tray
- E Mains Adaptor

System Specifications

Mechanical Specifications

Height	295 mm
Width	140 mm
Depth	200 mm
Weight	3.78 kg


Electrical Specifications

Voltage	24 Vdc
Current	1.5 A

Environmental Specifications

Warning – For indoor use only	
Temperature (Operating Limits)	5 °C to 40 °C
Temperature (Recommended Operation)	+15 °C to +30 °C (+59 °F to +86 °F) Performance may deteriorate if operated outside recommended range.
Temperature (Storage)	-25 °C to +15 °C (-13 °F to 113 °F) Short period only
Relative Humidity	Max. 80% RH up to 31°C decreasing linearly to 50% RH at 40°C
Altitude	2000 m
Pollution Degree	Level 2
Over Voltage Category	II

Print Specifications

Print Resolution	300 dpi	
Print Speed	3-5 seconds typically (full area print)	
Slide Tolerances	76.0 – 76.2 mm x 25.55 – 26.00 mm x 1.00 – 1.20 mm	

Chapter 2 – Installation and Setup

Installation and Setup

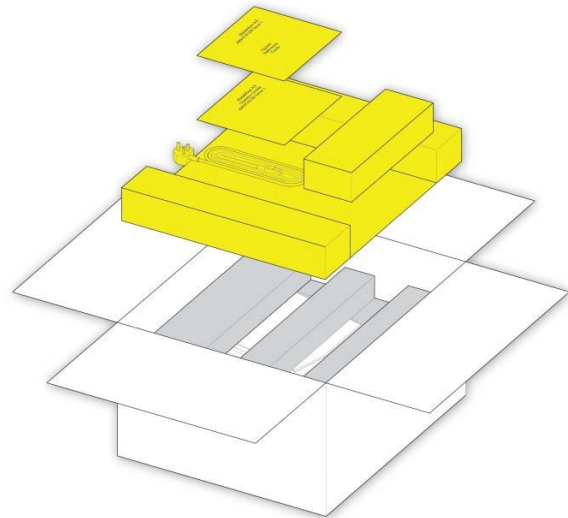
This chapter describes the installation and setup procedures for SlideMate AS and covers the following subjects:

- Unpacking the SlideMate AS
- Locating the SlideMate AS
- Electrical Connections and Start-Up Procedure
- Setting up the SlideMate AS

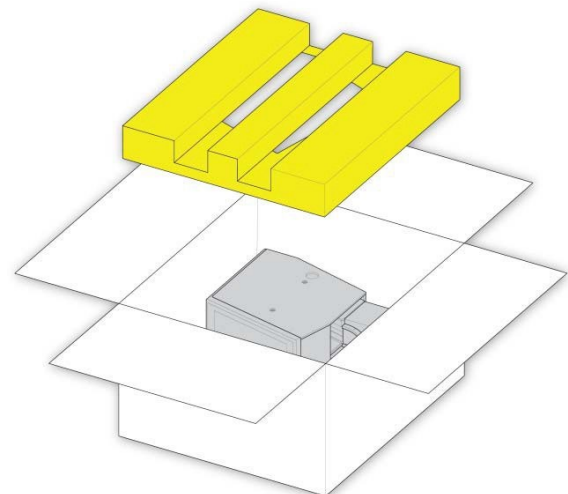
Unpacking

To unpack the SlideMate AS:

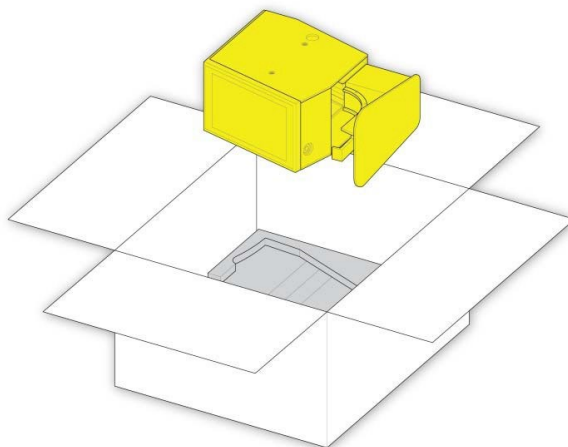
- Remove the accessories from the top of the packaging inside the box.



- Remove the upper inner packaging from the box.



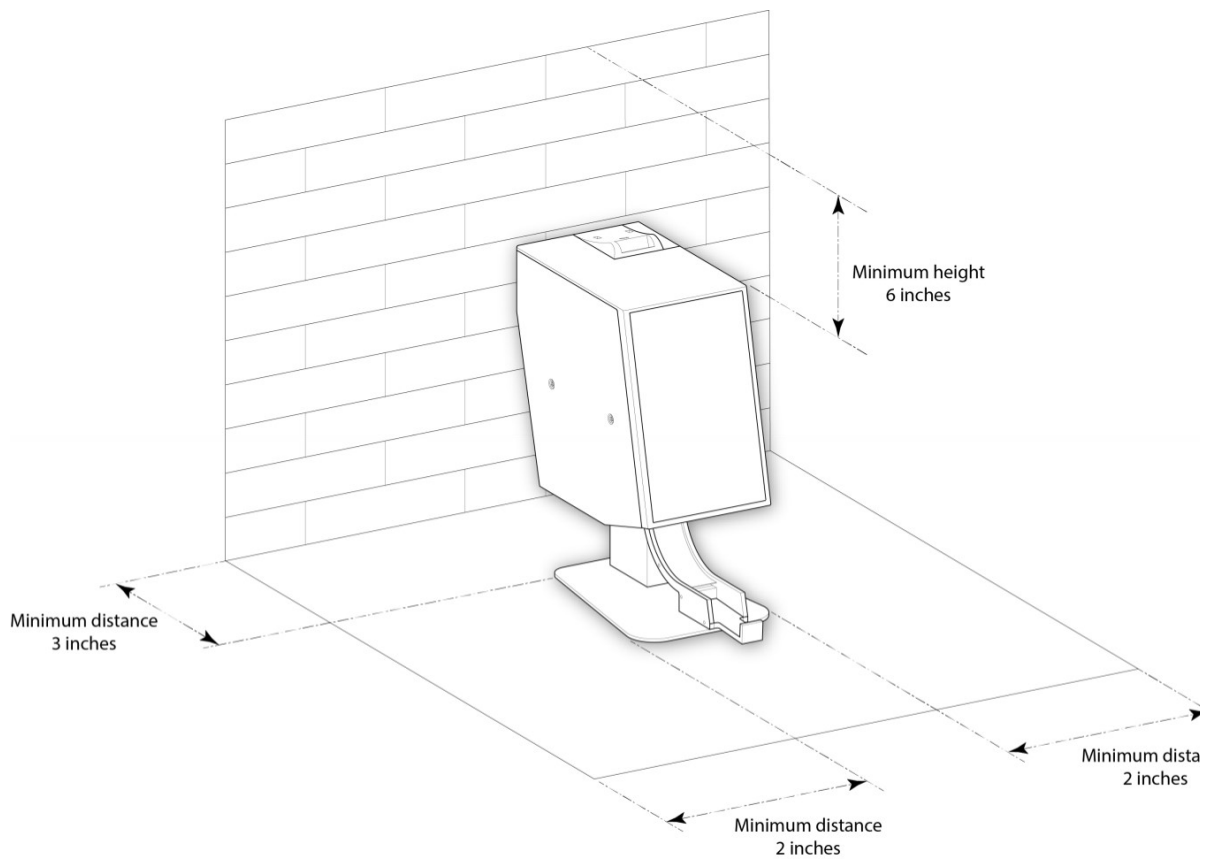
- Gently lift the instrument out of the packaging and carefully put it on a flat level surface.



Note

Make sure you retain the packaging including the inner packaging,

Locating the SlideMate AS



Note

The Slide Delivery System and Slide Hopper increase the height by approximately 8 inches.

Electrical Connections and Start-Up Procedure

Once you have unpacked your SlideMate AS and located it in the correct position within your laboratory, you need to ensure the connections to the instrument are setup correctly. Carry out the following:

- Connect the appropriate mains power lead to the power adaptor.
- Plug the round 24V plug into the power socket at the back of the printer.
- Plug the mains lead into the wall socket. This powers up the SlideMate AS.

Note






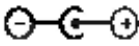
To reset the printer, press the power button on the back of the printer.

- Wait for the printer to run through its initialisation process which checks that the internal mechanism is operating correctly.

Back Panel and Connections




At the rear of the instrument are a number of connections, including the 24 Vdc power adaptor.

Signal connections suitable only for connection to equipment meeting the requirements of clause 6.3 of IEC 61010-1 or the SELV requirements of IEC 60950-1, 2014.

	On/Off button	Press and hold for 5 seconds to turn the printer off. Press to turn the printer on.
	USB to PC	Used to connect the printer to a PC running the windows driver or the Gateway application.
	Network	Used to connect the printer to a PC running the Gateway or the Hub (printer manager).
	2 x USB	USB 2 ports used to connect external keyboard or USB drive.
	Accessory Interface	Used to connect to printer-controlled accessories.
	24 Vdc	Only connect the supplied or specified 24V power adaptor.

Printer Status Indication

The top bar of the display shows the printer status:

	Ready	Printer is ready to print slides
	Busy	The printer is printing a slide
	Offline	The user is in printer setup and the printer is offline

IQOQ Print Test Slide

The first time the printer is run it is important to run the IQOQ test.

Press the **Settings** button and then enter the password if prompted.

- From the settings menu press the **Printer** button.
- Then press the **IQOQ Test** button.
- The printer is ready to print a test slide.
- The printer is ready to print a test slide. Ensure the slide is 76mm x 26mm x 1.0-1.2mm with a coloured marking area, preferably white.
- Drop a blank slide into the opening at the top of the printer. The slide orientation should be as shown on the display with the writing surface facing forwards.



- If the slide is not the correct way up the slide will drop through unprinted and you will receive a message saying the slide is upside down.

If you put the slide in glass facing forward, the SlideMate AS will try to print then you will have to reprint.

- The printed slide will drop into the collection tray.



- The print quality of the first may not be good as the ribbon may have moved in transit. If this is the case print another slide.
- Hold the printed slide under the front left corner of the printer so the blue lines of the scanner meet.

- When the barcode has been scanned, the display will show OK and automatically save the test results. You only get the correct image when the slides are printed correctly.

- Press the **Checkmark** [✓] button to the end of the IQOQ.



Note

The IQOQ Test can be run at any time.

Print Quality Setup

Slide Requirements

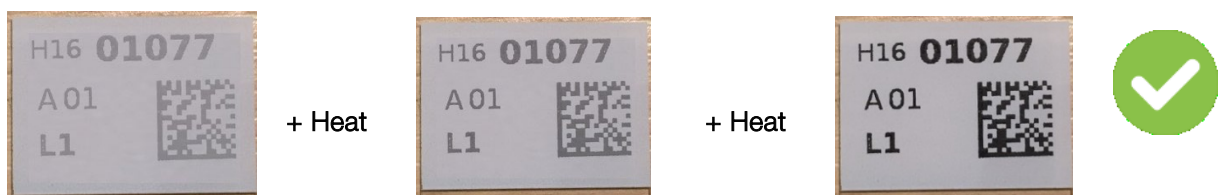
Slides must have a coated frosting. The frosted coating should cover 20mm of the length of the slide. The coating must be of uniform thickness across the entire width of the slide. The SlideMate AS Slide Printer uses thermal transfer print technology. This print technology requires stricter standards on the surface finish and cleanliness of the slide's frosted coating compared to slides that are used with ink jet technology printers. The coating must be smooth and free of any clumps or dust embedded in the coating or print defects will occur.

The quality of the slides printing surface determines the print quality. You cannot improve print quality by changing heat settings if the slide surface is low quality.

Print Head Heat Settings

Different slide types may need to have different heat settings. It is important to use the lowest heat setting possible.

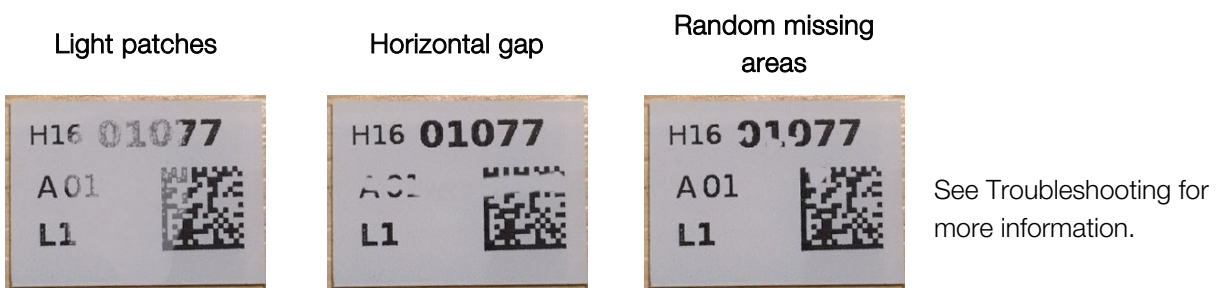
Start with a low setting and print a couple of slides. Increase the heat setting until you get a dark print. Try going back a setting if possible.



If you see any smudging this is a sign that the heat is too high or the print head needs cleaning. Try reducing the heat setting until it disappears. If it does not disappear there may be some debris on the print head preventing the heat dissipating through the slide surface. Clean the print head and go through the Print Head Recovery process.



If you see any of the effects below they are caused by the slide quality. Poor print quality is normally caused by flaws or debris on the printable surface of the slide. Increasing the heat setting will not improve these effects and may cause the head to overheat.


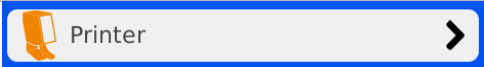
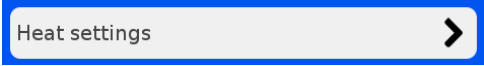




How to change heat settings


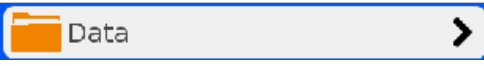
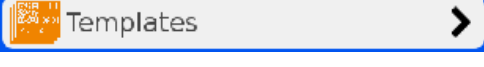
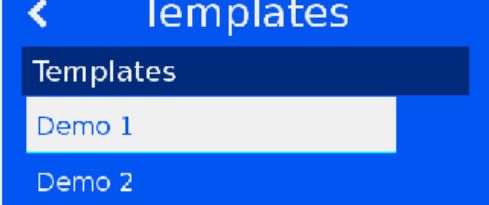


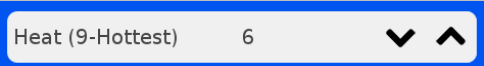
Software Version V5.0 and above.

The heat settings are adjusted differently on the On-Demand printer when compared to the Basic printer, the two methods to adjust the heat are listed below.

For the Basic Printer, the adjustment method is:

<ul style="list-style-type: none"> Press the Settings button. 	
<ul style="list-style-type: none"> Press the Printer button. 	
<ul style="list-style-type: none"> Press the Heat Settings button. 	
<ul style="list-style-type: none"> Press the up and down arrows [▲▼] to adjust the heat setting. 	
<ul style="list-style-type: none"> Press the Home button to return to the printing screen. 	

For the On-Demand Printer, the adjustment method is:

<ul style="list-style-type: none"> Press the Settings button. 	
<ul style="list-style-type: none"> Press the Data button. 	
<ul style="list-style-type: none"> Press the Template button. 	
<ul style="list-style-type: none"> Select the Template. 	
<ul style="list-style-type: none"> Press the Edit button. 	
<ul style="list-style-type: none"> Press the Template Settings button. 	
<ul style="list-style-type: none"> There are 9 heat levels with 9 being the hottest, use the up and down buttons [▲▼] to change the setting. 	

<ul style="list-style-type: none"> • The lowest setting “0” is the print head recovery setting. 	
<ul style="list-style-type: none"> • Press the Home button to return to the printing screen 	

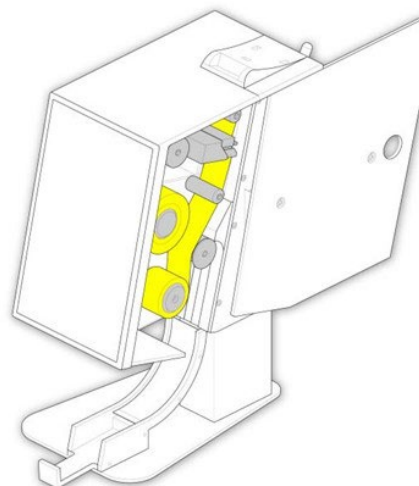
Repeat this process until you get a dark print. If you increase the value and print does not get darker you have reached the limit for that slide type. It is a good idea to step the heat setting back one. This provides a better margin for the print head.

Changing the Thermal Transfer Ribbon

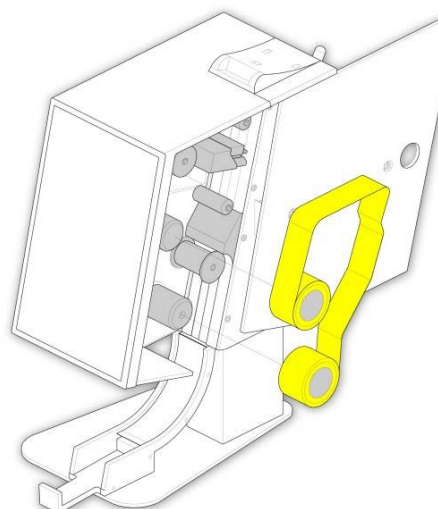
Removing the Thermal Transfer Ribbon

Once the instrument has used all the Thermal Transfer Ribbon and filled the Collection Spool, carry out the following instructions to remove:

- Open the sliding door.



- Unhook the remaining ribbon from around each of the spools and remove the collection spool and supply spool from the instrument.

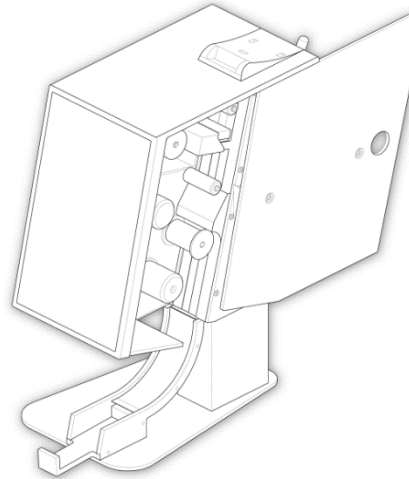


- Always clean the print head when changing the ribbon. Debris can build up on the print head over time.

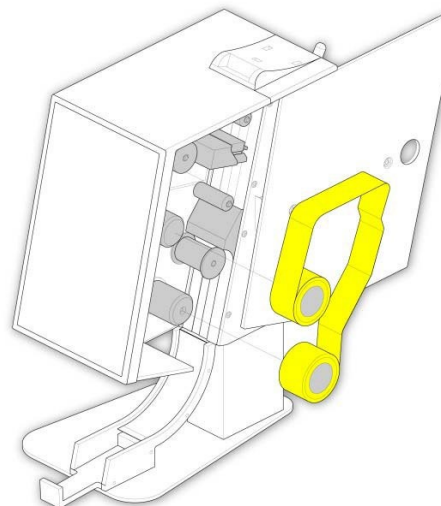
Fitting the Thermal Transfer Ribbon Roll

In order to fit the Thermal Transfer Ribbon, carry out the following instructions:

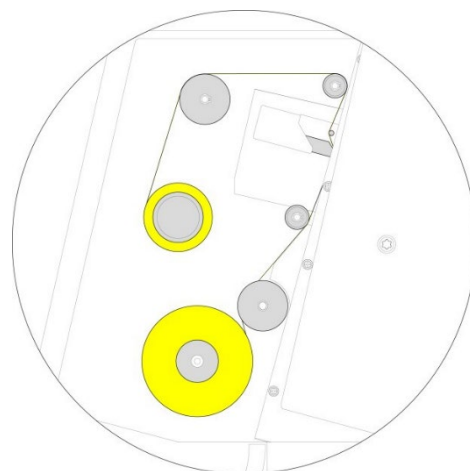
- Slide open the side door to access the spools inside the instrument.



- Fit the supply spool onto the instrument using the clear lead attached on the roll.

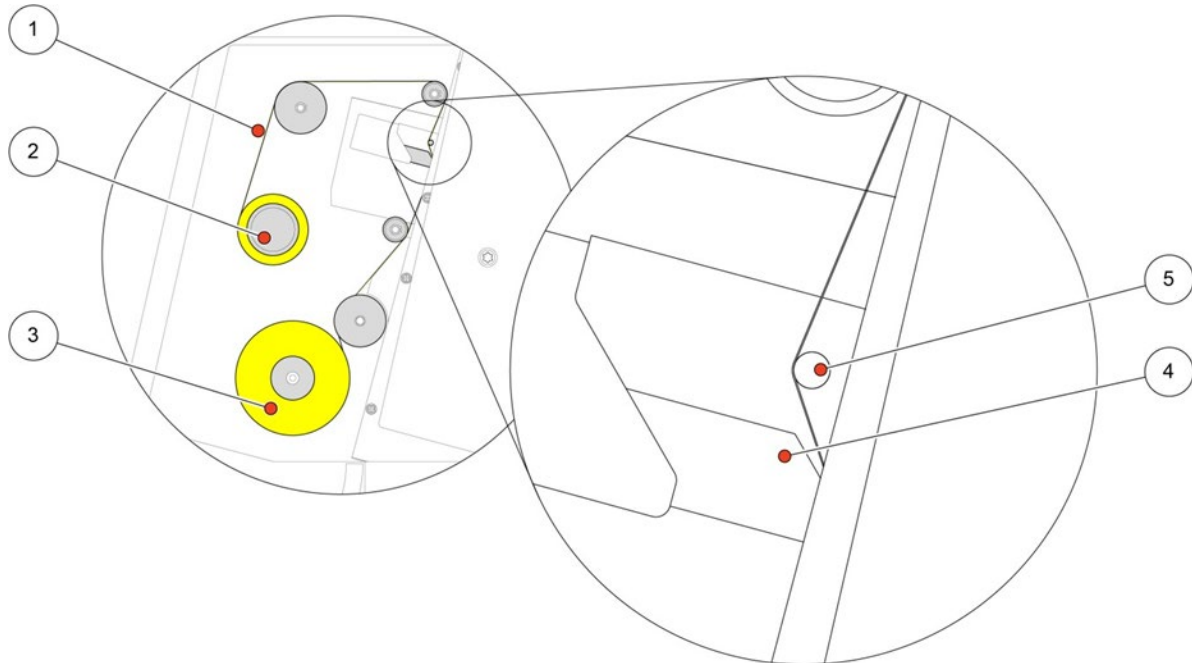


- Feed the ribbon through the instrument ensuring that the ribbon is fitted in the correct position over every spool. Fix the ribbon to the collection spool using tape.



Note

When you fit the ribbon, do not forget to fit the ribbon over the Ribbon Guide Pin near the Print Head. Remove the clear leader from the roll prior to affixing the ribbon to the spool. Set the leader aside for reloading ribbon mid-roll if necessary.



- | | |
|---|-------------------|
| 1 | Ribbon Matte Side |
| 2 | Collection Spool |
| 3 | Supply Spool |

- | | |
|---|------------------|
| 4 | Print Head |
| 5 | Ribbon Guide Pin |

Cleaning and Maintenance

General

The slides pass through the printer under gravity so it is important to keep the guideway clean.

When the ribbon is replaced use the opportunity to:

- Check the guideway for dust or other materials that could obstruct the slide.
- Clean the print head.

Installation of New Printer Software

Occasionally, there will be software upgrades available that provide new features or improvements for existing features. These software updates can include both user-interface and machine software (firmware). For this reason, extra steps beyond the automated steps will need to be performed as part of the installation process.

In addition, there is an End User License Agreement (EULA) that will need to be read and confirmed prior to software installation.

To ensure the software is installed properly, the instruction process below must be carefully followed. The installation process will require the power to be cycled several times.

The new software will be supplied as a single file; the file will be similar to the following example pisp_23041650 as the document describes the software and process further, this file will be referred to as a "pisp file".

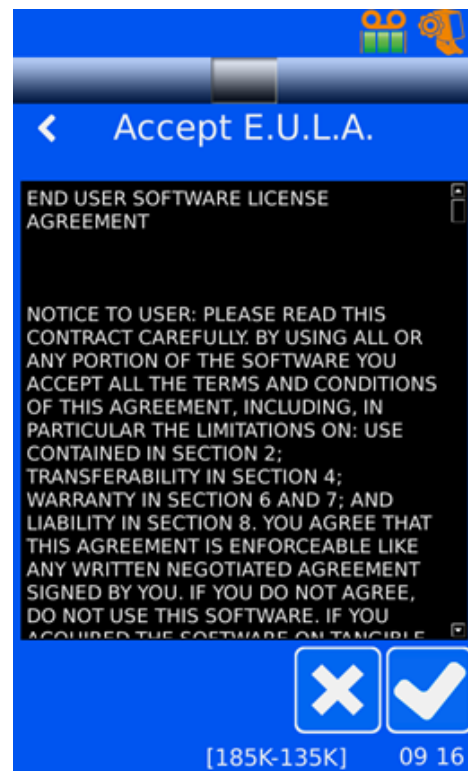
The printer software can be updated by copying the pisp file to a memory stick in the root directory and inserting the memory stick into the USB port on the back of the slide printer.



Do not unplug the memory stick until the software upgrade has been fully completed.

If the printer is connected to a network or PC, the printer should be disconnected from the network or device by disconnecting the cable or turning Wi-Fi off before attempting to install the software.

- Press **Settings**.
- Press **General**.
- Press **Software**.
- Press **Upgrade**. Depending on the version of software currently installed, you may see an End User License Agreement (EULA) that will need to be read and confirmed to advance the installation process.
- A message should pop up saying the upgrade pisp_xxxxxxx is ready to be installed.
- Press the confirmation to begin the upgrade.



- The software installation process will cycle the power to the unit automatically.
- When the unit completes the cycle and the home screen is displayed, disconnect the power cable, wait ten seconds and reconnect the main power.
(If a slide delivery system is connected, disconnect at the Y-cable removing power from both the printer and the SDS)
- The printer will power up to one of two menus. It may appear normally displaying the home screen or it may display a blank slide. If the blank slide appears, use the following steps to display a valid template.
- Press **Settings**.
- Press **Data**.
- Press **Templates**.
- Press a valid template.
- Press the **Pen** button.
- Press **Home**.
- The template should now be displayed.

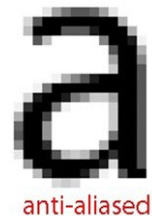


Do not unplug the memory stick until the software update has been fully completed.

Threshold Setting

The Threshold setting was developed to overcome some printing defects that are caused by the uneven printing surface on some types of microscope slides.

When documents are created, most computer programs use what is called anti-aliasing to make text and numbers visually appealing to the eye. The text is made up of black and grey shades which can be printed using an inkjet printer.

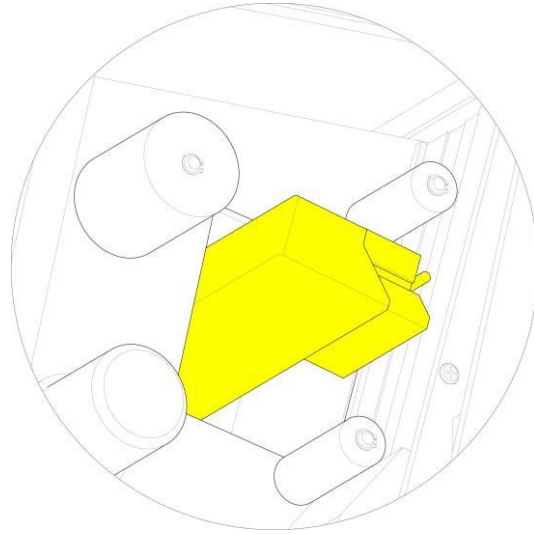


Thermal transfer printers only print black, so as these images are sent to thermal printers, the printed lines which make up the alpha-numeric characters can appear thin or broken. The new Threshold setting allows the grey shades to be converted to black in a sort of reversal of the anti-aliasing process. The Threshold Setting number set provides a point where the shade is converted to white or black for printing. The Threshold Setting has a single adjustment, this setting will be used for all templates and heat profiles.

Cleaning the Print Head

The print head should be cleaned every time the ribbon is changed or if any of the following occur:

- The print on the slide is showing signs of smudging.
- The print ribbon burns through or when the ribbon is loaded upside down.
- The quality is not the same as previously observed, most print quality issues are caused by the slide print surface. Check Print Quality Trouble shooting for possible causes first.



Avoid touching the print head surface with bare skin.

- Remove the print ribbon from the printer.
- Remove a swab from the SlideMate AS cleaning kit (part no. A83910008) and bend the tube at the swab end to release the solution. Rub the print surface edge (where the print head contacts the slide) of the print head firmly with the swab. Do this several times until no residue is visible.
- Let the print head dry for two minutes before loading the ribbon.

Print Head Recovery Process

The print head can become stuck in a mode that prevents the heat settings working. This is caused by the head over-heating. If the ribbon burns through, use the following process to recover the print head.

- Clean the print head to ensure it is clean and free of any debris.
- Select a template and reduce the heat setting to the lowest possible setting.
- Print 3 – 4 slides.
- The print will probably be light but still check for signs of smudging.
- Increase the heat setting slightly and print another set of slides.
- Check carefully for any signs of smudging.
- Repeat this until you are getting a reasonable print without any signs of smudging. If there are any signs reduce the heat, if they persist clean the head again and start the recovery process from the start.

Routine Maintenance

The following is a recommended maintenance schedule for the EpreDia slide printer:

Daily Maintenance

- Fill the slide dispense hopper with slides.
- Brush any glass fragments from slide delivery system, output chute and around unit.

Weekly Maintenance

- Clean touch-screen (with power off, wipe with soft cloth and glass cleaner).
- Check the print media volume remaining, replace if necessary.

Annual Maintenance

- Check and update the instrument software (if a new version is available).
- Save xml files from the slide printer to a memory stick.

When Necessary

- Clean print head using POPule swab if the ribbon breaks for any reason.
- When changes are made to the slide printer configuration, a back-up copy of the xml files should be created.

Chapter 3 – Basic Operation

Basic Operation

The printer is designed for on-demand printing. It has built in software and barcode reader enabling it to operate independently. You can manually insert slides or fit the optional slide delivery system.

Collection Guide

- The printer is designed for on-demand printing and has a collection guide with a capacity of 10 slides.
- The collection guide has a tray with open sides to enable the printed slides to be picked up as they are printed.



Slide Jams

- It is important that no more than 10 slides are allowed to collect in the collection guide.
- The printer cannot detect a build-up of slides on the collection guide. It detects the slide exiting the printer.
- If slides are allowed to back up they will eventually prevent slides exiting the printer and causing a jam.
- If a slide cannot exit the print mechanism the next slide may drop through the bottom stop and be in the wrong position for printing. This will cause the print head to print in air and overheat resulting in melted or broken ribbon.
- The head will require cleaning and the Print Head Recovery process should be followed.



Keep slides dry and free of wax

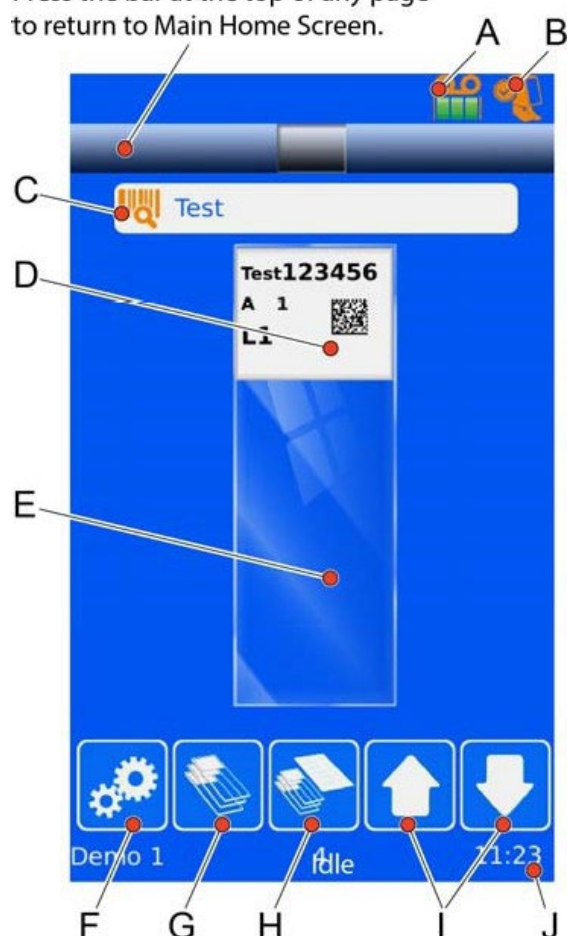
If you are manually loading the printer it is important to keep the slides dry and free of wax. If water drops or wax enters the printer it can cause slides to stick to the internal guide.

Main User Interface

The printer is now ready to print slides. The default Template is displayed which has three fields.

A	Ribbon Level
	This tells the user how much ribbon is left before it needs replacing. <u>This feature is not active.</u>
B	Printer Status
	Displays what the current status of the printer is.
C	Scanned Data
	Shows the information that has been scanned by the printer.
D	Template
	Shows the data that will be printed on the slide. To edit you touch the middle of the template.
E	Eject Button
	Pressing the clear part of the slide will initiate a slide sequence. If a hopper is attached it will initiate a print sequence.
F	Setup
	Opens the administration menus.
G	Create Sequences
	See – Creating sequence of slides.
H	Open Protocol
	See – Selecting a protocol and saving a protocol.
I	Increment / Decrement
	The up and down arrows increases and decreases an incremental field.
J	Status Bar
	Displays status information.

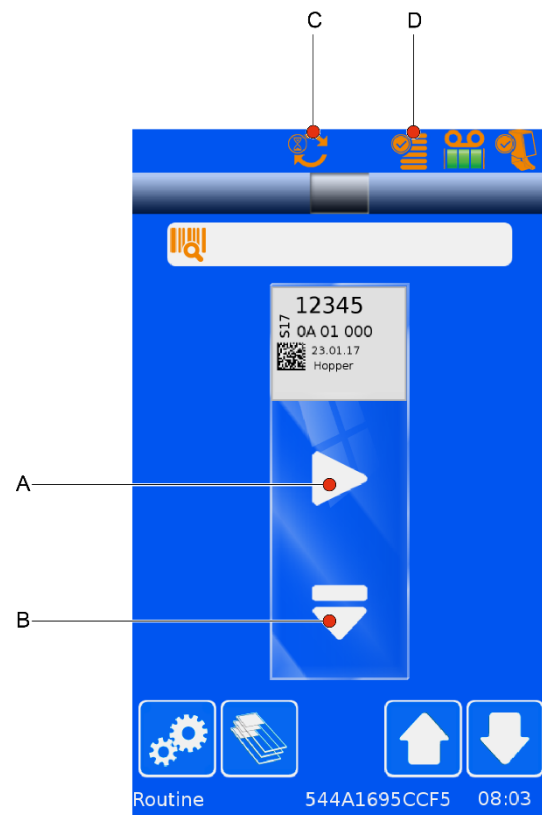
Press the bar at the top of any page to return to Main Home Screen.



Main User Interface with Slide Delivery System connected

The printer is now ready to print slides.

A	Play Button
	When pressed, will initiate the printing process.
	To configure the operation of this button, modify the settings within the Printer>Hopper menu.
B	Eject Button
	Runs the eject cycle, if a slide is inside the printer pressing this button will eject the slide.
C	Gateway Icon
	Shows the status of the Gateway Connection.
D	Hopper Status
	Displays the status of the Slide Delivery System.
	When a Check is displayed on the icon, the SDS is ready for use.
	When an hour glass is displayed, the SDS is busy.



Editing Label Field Data

- From the Main Screen showing the slide that you are going to print, press the print area on the Slide which will then allow you to edit the information shown.

A	Moves from field to field.
B	Allows you to select a template layout for the printed area of the slide.
C	Backspace; removes the last character of the field selected and brings up the keyboard.
D	Moves from field to field.
E	Accepts changes.




- Once you have selected a particular field to change, press the backspace button on the screen previously and the keyboard will appear. This will then allow the user to make changes to that particular field.



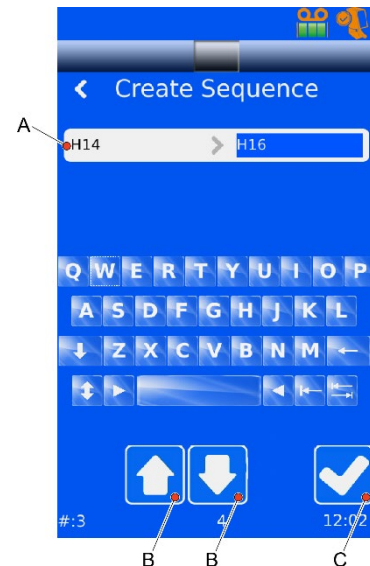
- After making any changes to the appropriate fields, press the **Checkmark** [✓] to accept the changes.
- Drop a slide into the chute on the instrument and print one slide only to verify if the print is correct.

Creating a Sequence of Slides

- From the Main Screen showing the slide that you are going to print, press  .

This will then take you to the Create Sequence screen.

A	Press to modify the slide numbers to and from that will appear on the series of slides.
B	Increment up or down the highlighted field of the slide number.
C	Press the Checkmark [✓] to accept the changes.



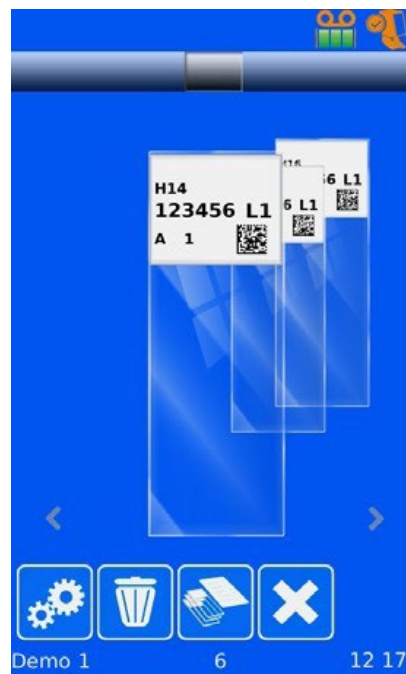
- Once you have selected the number of slides you want in the sequence you are creating and have made all the relevant changes to the required information on each slide, they will appear on the main screen.
- The sequence can be browsed using the arrows on the screen next to the slides.



Creating a Protocol

A protocol can be used to recall frequently used sequences. Using the protocol function will enable the user to scan a cassette and create a print queue with fewer keystrokes than would be necessary if the sequence were created manually.

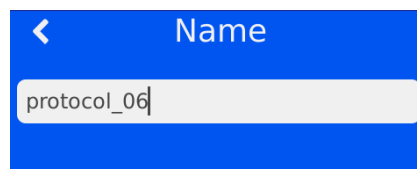
- Once the sequence has been created, use < or > arrows to scroll through the slides, then press the White label area to edit the individual slide information.
- Select each slide and modify editable items on individual slides. The template displayed on the slide can also be set individually on each slide. (This may be especially useful when printing IHC or Special stain slides as part of the sequence with routine slides).



Note

Individual items on the slide label will be populated differently when the label is being created.

- **Translator Items** will be populated by the scan of the cassette and all slides with these items will retain this new information when printed.
- **System Items** will update based on the scan period. An example is time and date, this will populate with the time and date of the scan.
- **Normal and Editable Items** not change once the protocol is created. These will always print the information entered or selected when the protocol was created.
- Move to the next slide and change the field until all changes are complete.




Saving a Protocol

Note

Before creating a Protocol, ensure all the data is cleared.

To create and save a protocol, follow the steps below:

A	Create a sequence.
B	Modify individual slides with any unique information.
C	Press the Protocol button  .
D	Modify the Name. It is recommended that a name is used that helps the user to understand the batch of slides the protocol will create, then press the Checkmark [✓] button.

- Once the protocol has been established, you now have the ability to scan your barcode.

Select the protocol by pressing





- Highlight the required protocol and press the **Checkmark** [✓] button.



Deleting a Protocol

Existing protocols can be deleted. Protocols can be deleted from the Protocol selection menu.

To delete a protocol:

A	Scan a Cassette or Barcode.
B	Press the Protocol button 
C	Select the protocol to be deleted.
D	Press the Trash bin button 
E	Press the Home button.

Using the Touch Panel Administration Configuration Menus

- From the main start-up screen press the **Settings** button.

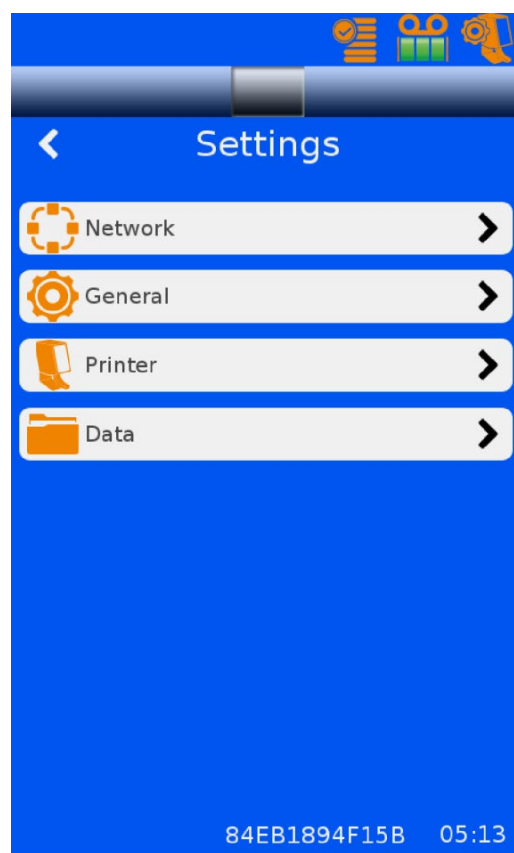


- Enter the passcode **7251**.

Note

If the password option is not enabled, you can activate it in the Printer Section of the Settings Menu.

- Press the **Checkmark** [✓] button
- The Settings Menu will be displayed.



Network

IP Address	This will populate when connected to a network.
MAC Address	This is the MAC address of the slide printer, this will automatically populate when the printer is on a valid network.
Name	This is the name the device will display on some networks and applications. This can be customised by pressing this button.
Connect to Hub	Select this option when you want to connect to a Hub. A Hub is a Pyramid Innovation device that is not yet available.
Connect to Gateway	This allows connection to the Gateway software. This will be used when sending data from a LIS to a cache directory.
Data Port	The data port can be manually configured using this button. The same port setting must be used on the PC.

Network

IP Address >

MAC Address 84EB1894F159

Name 84EB1894F15B >

Connect to Hub ☐

Connect to Gateway ☐

Data port 9100 >

84EB1894F15B 05 13

General Menu

About	Version	The current version number of the software loaded on the instrument.	
	Driver	This is version number of the Driver of the instrument.	
	Count	This gives the total number of slides the instrument has printed.	
	Machine ID	Unique ID number for the instrument.	

Software	Upgrade	With the upgrade pisp file on the USB stick, this function will automatically search for the upgrade.	
	XML	Reset	Resets the instrument back to factory settings.
		Export	Copies all the software XML files to the USB stick.
		Import	Imports all the software XML files from the USB stick.

Date & Time	Hour	Allows the user to update the time on the instrument.
	Minute	
	Year	Allows the user to update the date on the instrument.
	Month	
	Day	

Keyboard	To lower case	Automatically shifts keyboard to lower case letters when first letter is typed.
----------	---------------	---

Display	Screen Grab	Allows the user to select to make screen shots of the instrument display.
---------	-------------	---

Sound	Volume	Allows user to change volume level.
-------	--------	-------------------------------------

Scanner	Pause	Pause (10 th sec); slows the scanners reaction to prevent the scanner from scanning a barcode more than once.
	Off/On	Turn scanner off and on. Any changes require power cycle to activate setting change.



Printer

This function allows you to make changes to the settings regarding the print function of the instrument.

From the Settings Menu press the **Printer** button. The following screen will be displayed:

Index Ribbon	Use this after loading the ribbon to ensure the ribbon is tight.
Reset Printer	Resets the print head to the home position.
Heat Settings	To adjust heat settings.
IQOQ Test	Run this test before printing. This verifies the print and the barcode scan ability.
Setup Password on	This will force the user to log in with a password.
Hopper	To adjust hopper settings.
Production	This function is for service, a special password is required.



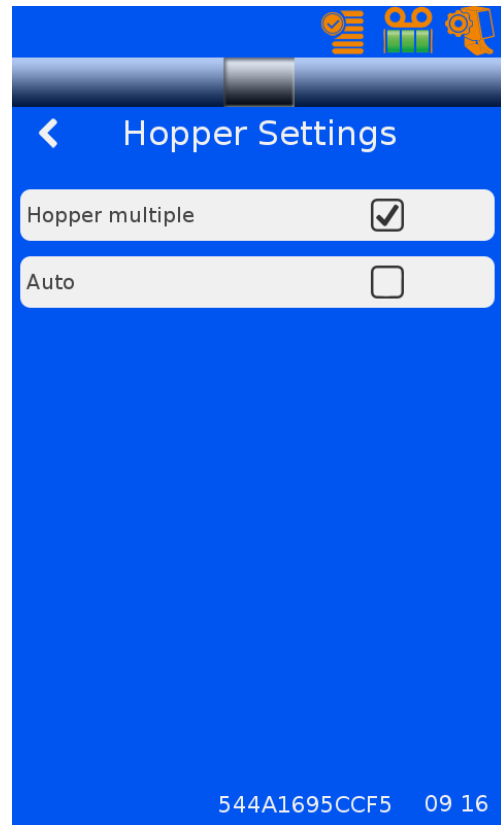
Note

The Hopper button will only appear if a Slide Delivery System is connected.

Hopper Settings

This function allows you to make changes to the settings regarding the Slide Delivery System function.

A	Press Settings .
B	Press the Printer button.
C	Press the Hopper button. If a Slide Delivery System is not attached, this button will not appear.
D	Hopper Multiple. When checked, all slides in the queue will be printed when the play button is pressed. When unchecked, one slide in the queue will be printed when the play button is pressed.
E	Auto. When checked, the printer will automatically begin printing when records are sent from either the Gateway or Windows printer. When unchecked, the printer will only start printing when the play button is pressed.

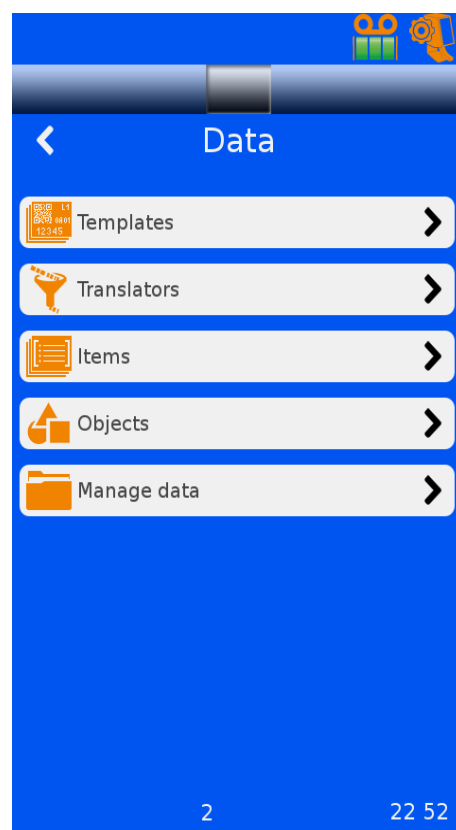


Data

The Data tab allows the user to configure what information will be shown on the slide once it is printed. You can access this information from the settings menu.

When you click on the **Data** button the following screen appears:

Templates	The Templates function allows the user to set up and save Templates used when printing information onto slides. Also, to select any previously saved templates.
Translators	This function allows the SlideMate AS to scan a cassette and transfer the information into an existing template then print that information onto a slide.
Items	This function allows the user to select which items are to be shown on a particular template. The user can add or remove certain items from each template and also specify where on the printed slide they will appear.
Objects	This function allows you to select the object hierarchy which will dictate the numbering level used in the templates.
Manage Data	Data can be managed on the printer and can be exported for external use.



It is recommended that you follow the process below:

- Verify that you have the items required for use on the template.
- Configure the Translators if required (both for the scan into the template and the barcode out of the template).
- Setup the Templates.

Data Management

Data can be managed on the printer and can also be exported for external use. To begin using the data management feature, you will need to configure the retention settings.

- Press **Settings**.
- Press **Data**.
- Press **Manage data**.

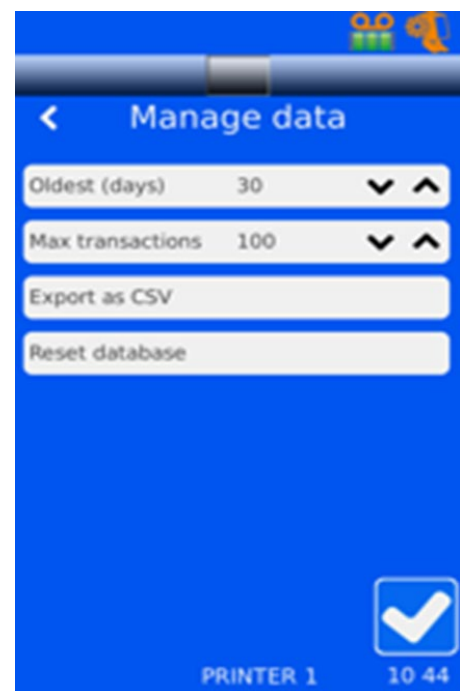
Data can be managed by number of days records can be saved and also maximum number of transactions. To set these, simply press the up and down arrows to set the desired limit.

Note

The system uses both settings. If you are using a wish to retain on number of days, you should set the Max Transactions to its maximum number to retain the highest number of records.

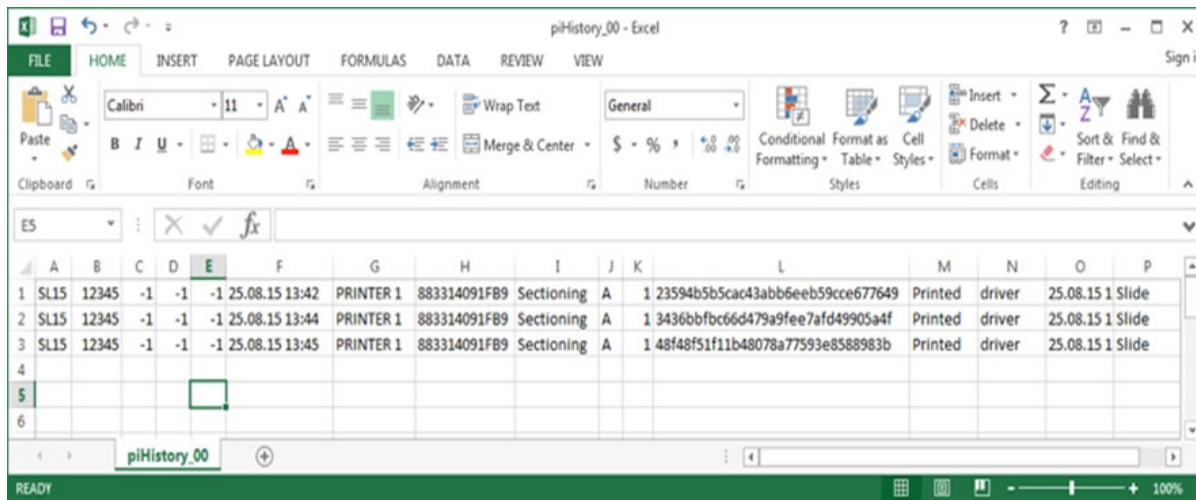
- Oldest days can be set between 1 and 60 days (default is 30 days)
- Maximum Transactions can be set between 1 to 1,000 (default is 100)

Printer data can be exported from the printer to a memory stick in a CSV format.



To export the data:

- Place a memory stick in one of the USB ports on the back of the slide printer.
- Press **Export as CSV**.
- A window will pop up with the file name the data is being exported to.



The exported data can be opened using Microsoft Excel or Notepad.

Object Hierarchy

There can be any number of objects. For example:

- Request Form
- Tissue Pot
- Cassette
- Slide

The relationship of the objects is parent and child. The Request forms are the parent of the Tissue Pot and the Tissue pot is the parent of the cassettes etc.

The numbering system used to reference these objects is normally well defined. For example:

- Request Form = Prefix + CaseNo
- Tissue Pot = Prefix + CaseNo + Suffix1
- Cassette = Prefix + CaseNo + Suffix 1 + Suffix 2
- Slide = Prefix + CaseNo + Suffix 1 + Suffix 2 + Level

The numbering system will normally uniquely identify each item by adding a suffix or other data element to create a unique reference ID.

The object hierarchy can be used to filter data coming in from the Gateway. For example:

- If the LIS does not control the flow of slide data and the user wants to receive slide data from one cassette at a time the SlideMate and Cassette hierarchy can be setup and used to filter the data.
- The Group option would need to be turned on (Printer menu).
- The Object setup is used to identify objects by their data items. An image can be set for each object type.
- This image will be displayed where objects are searched or displayed in tracking.

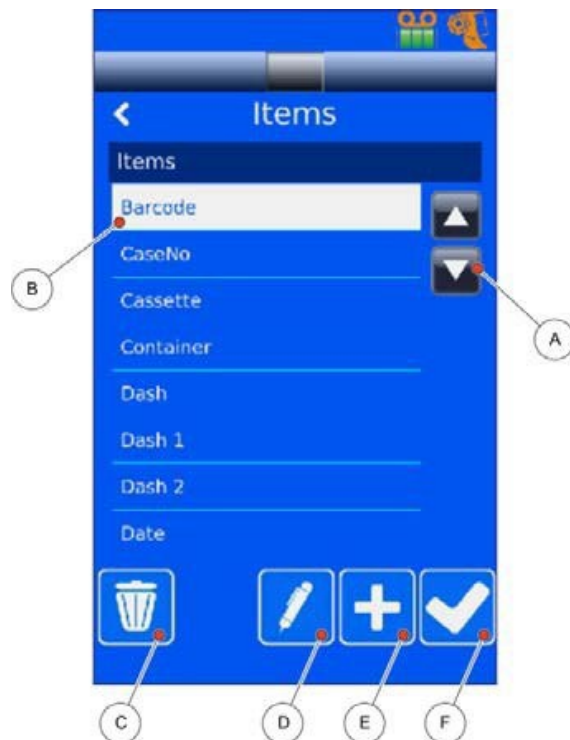
Chapter 4 – Advanced Operation

Items

Adding, Editing and Deleting

Data items are used to store data and display data in templates.

A	Scroll Buttons
B	Selected Item
C	Delete Selected Item
D	Edit Selected Item
E	Add Item
F	Save and Close



Add Data Item

From the settings menu, after entering the password, Select Data, Items.

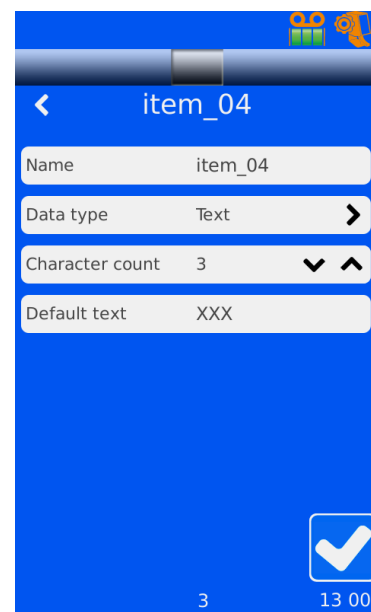
- Click the  button to add an item.
- Change the name of the item.

A	Back arrow to return
B	Enter Item name
C	Upper / Lower Case
D	Delete one character
E	Numb & Spec Character
F	Move Cursor
G	Deletes Full Word
H	Cancel Changes
I	Accept Changes



- Press the **Checkmark** [✓] to accept the changes.
- Once you have added and renamed your Item, you then need to configure it.

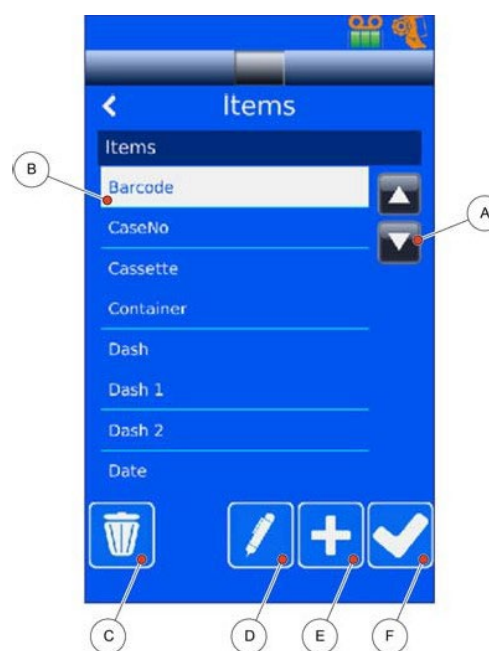
Name	Name of Item specified previously	
Data Type	Text	Alpha / Numeric
	Numeric	Numbers only
	List	Used when multiple items are required
	Date / Time	Fixed Field
Character Count	Maximum number of characters for the item	
Default Text	Text that will be displayed in the field as default. Touch to edit	



- Hit back arrow to return to Items screen.
- Press the **Checkmark** [✓] to accept changes and go back to the Data Menu.

Editing a Data Item


A	Scroll Buttons
B	Select Items
C	Delete Selected Item
D	Edit Selected Item
E	Add Item
F	Save and Close



Note

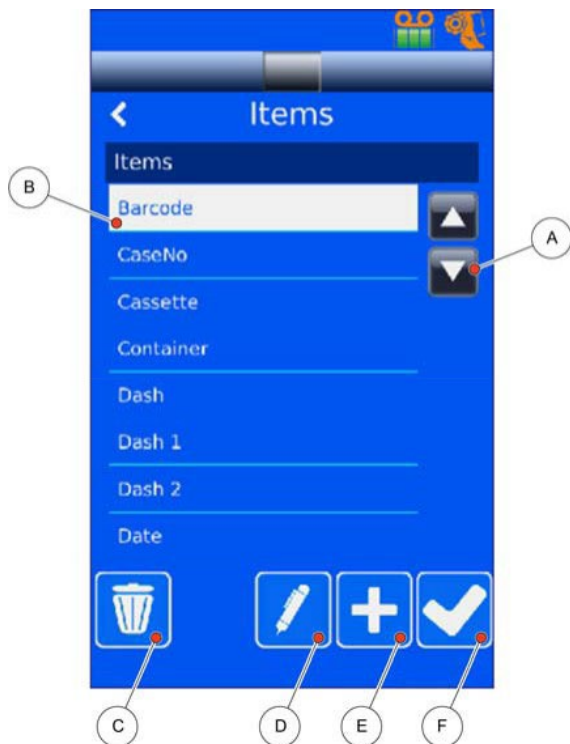
System items should not be altered. Items that can be altered are as follows:

Barcode	Patient Name	Liver prot
CaseNo	B1	Free Text
Level	B2	Z-Linear
Prefix	B3	Z-2D
Suffix 1	Space	Z-Slide Type
Suffix 2	Text1	Z-Calibration
Accession number	ABC 1	Z-sequence
Slide Number	ABC 2	Z-thermo
Site	Antibody	
Location	Stain	

- Highlight the item that you want to edit.
- Press the **Edit Selected Item**  button.

Deleting a Data Item

A	Scroll Buttons
B	Select Item
C	Delete Selected Item
D	Edit Selected Item
E	Add Item
F	Save and Close



Select the item to be deleted:

- Hit the **Garbage Can** button.
- If the item is on a template; remove it first before deleting the item.
- Once changes are complete, hit the **Checkmark** [✓] or the back arrow to return to menu.

Translators

Translators have two functions:

- The first use is to take a barcode and separate the fields to populate the items on the template.
- The second use is to take the data items and place them into a barcode and print it on the template.

Note

Translators can use multiple delimiters and delimiters made up of multiple characters. Each Translator can only be used for one function.

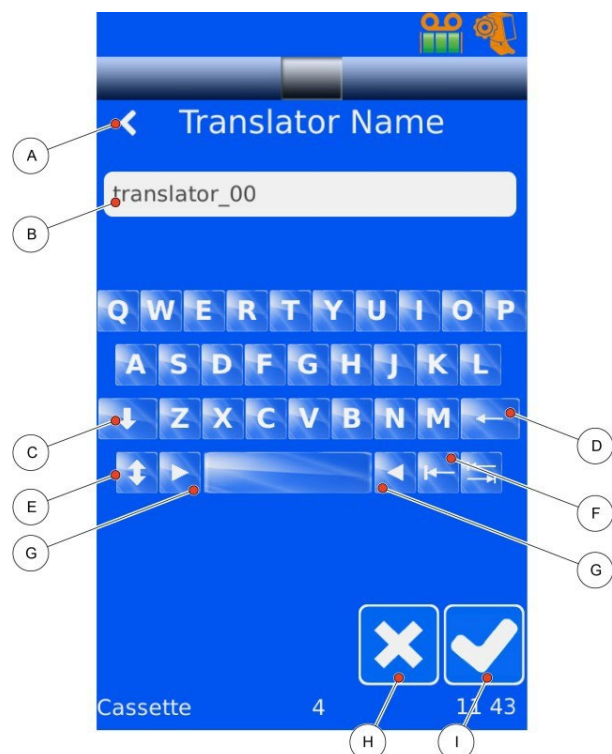
Blank spaces cannot be used as a delimiter value.

Translators for Data Items

To create a translator to populate the data items on a template.

- Press the **Settings**, **Data** then **Translators**.
- Click on the  button.
- Change the name of the translator.

A	Back arrow to return
B	Enter Item name
C	Upper / Lower case
D	Deletes one character
E	Number and Special characters
F	Deletes Full word
G	Moves Cursor
H	Cancel
I	Accepts



- Once you have entered the correct name for the Translators, press the **Checkmark** [✓] to accept the changes.

- If scanning a barcode in order to populate a field, hold the barcode under the scanner on the left lower side of the SlideMate AS.



- Or manually enter the date string that will be sent from the LIS through the Cache Directory.

- Press the **Checkmark** [✓] to accept changes.



Delimiters

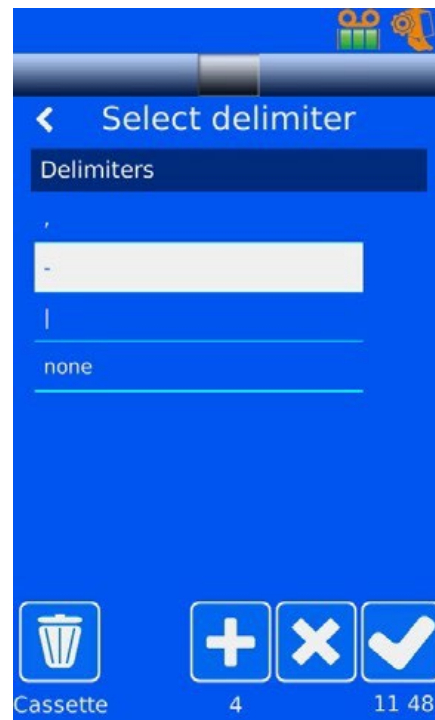
Select the Delimiter and then press the **Checkmark** [✓].

- If the delimiter is not on the list, press .
- Add the delimiter.
If using a non-standard delimiter that is not available on the standard keyboard, you can scan the delimiter in using the barcode reader, then delete any unwanted characters.
- Press the **Checkmark** [✓] to accept the changes.
- If multiple Delimiters are required, press  until you have all the necessary delimiters.





Note

The message box 'This will cause loss of all assignments and rules. Continue?' Press Yes to add multiple delimiters.

- Press the **Checkmark** [✓] to accept the changes.
- Once the necessary translators are located on this screen, press the **Checkmark** [✓].
- The scroll button allows you to move delimiters up and down the list to the required location.



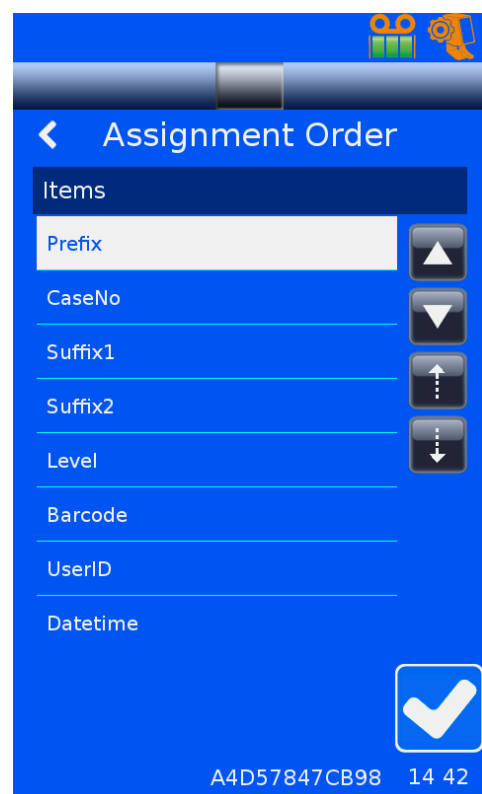
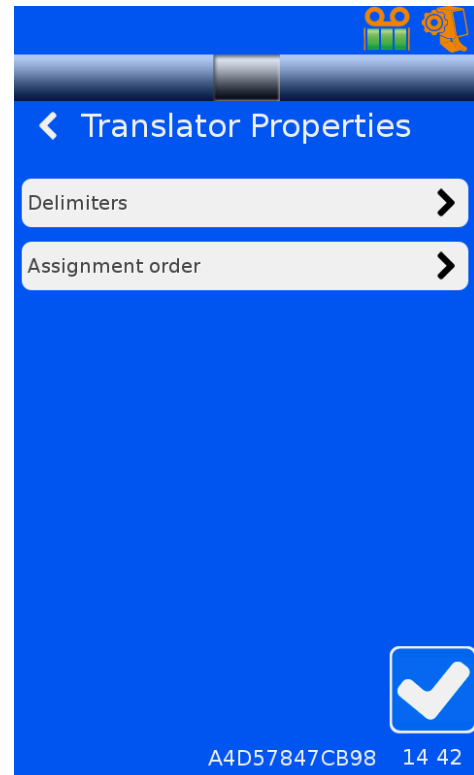
Name	Press to change the name of the translator.
Object	This is by default.
Code	Example of Code.
Delimiter(s)	Press to verify Delimiters.
Item Assignments	(Data) assignments.

- Data assignment attempts to assign the correct item to the delimited data. To view the assignments, press the **Item Assignments** button.
- If the assignment is not correct, select the item and

 press  to edit and choose the correct item, then press the **Checkmark [✓]** button.
- If any data is not assigned at all;=(*), select the data,

 press  to edit and select an Item, then press the **Checkmark [✓]** button.
- When complete, press the **Checkmark [✓]** to accept the changes.


Assignment Order

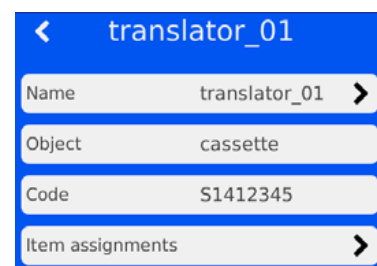
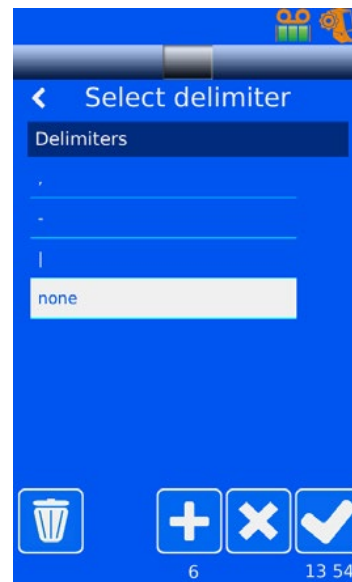
The automatic assignment is configured base on a predefined selection order. This order may be modified to customise the assignment to a specific software setup. To change the assignment order, follow the steps below.

A	Press Settings .
B	Press Data .
C	Press Translators .
D	Press Settings button.
E	Press Assignment Order .
F	Use the solid up and down arrows to find the item to be moved.
G	Press the dotted arrows to move the item to reorder the assignment.
H	Press Checkmark [✓] when completed.



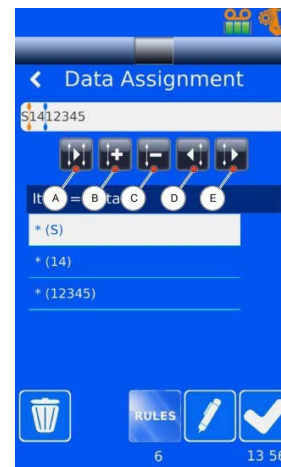
Translators without Delimiters


- From the Data Screen, press the **Translator** button.
- Press the  button to add a new Translator. Rename the Translator as required.
- Enter the code or scan the barcode. Once the code appears on the screen, press the **Checkmark** [✓] to accept changes.
- When the Select Delimiter screen appears, select '**None**' from the list. Then press the **Checkmark** [✓] to accept the change.
- The translator configuration screen will then appear. Press the **Item Assignments** button.



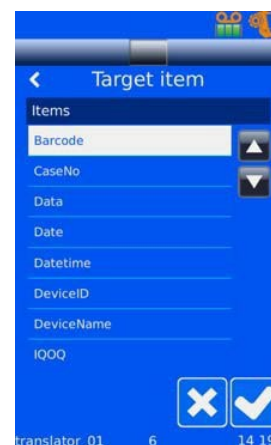
- The Data Assignments screen will then appear. This allows the user to assign the line separators what will allocate the individual parts of the code.

A	Selects Separation Line.
B	Adds the Separation Line.
C	Removes the Separation Line.
D	Moves the Separation Line to the Left.
E	Moves the Separation Line to the Right.

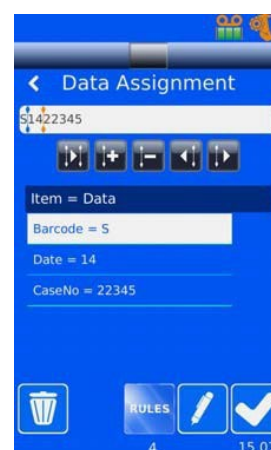


- Once all the Line Separators are in place in the code, press the **Edit** button  , to select the data Target Item.


- Use the scroll bars to locate the relevant Target Item. Once selected press the **Checkmark** [✓] to accept the changes. Do this for each item.



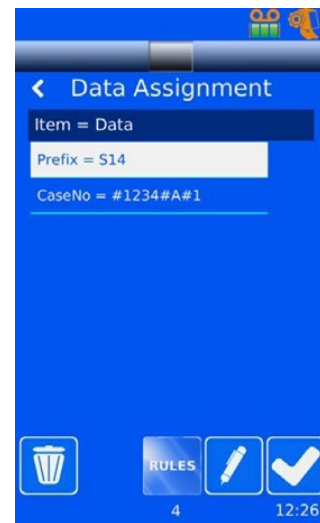
- Once all the Items have been assigned to a Target Item, this is what the finished product will look like.



Rules

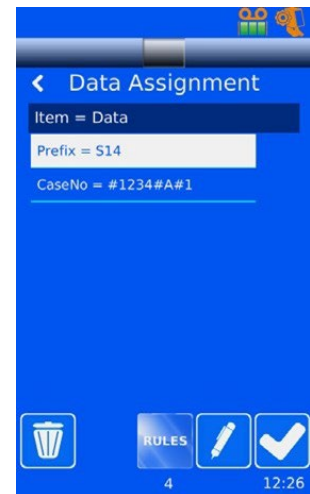
- Rules can be set based on the data that is to be delimited, e.g. if you want to use this delimiter for the Prefix, highlighted Prefix and press **Rules**.
- The following screen will appear allowing you to either select a desired Rule or to create a new Rule.
- Press  to add a new Rule. You can then name the Rule you are about to create.
- Once you have entered the required name for the new Rule, press the **Checkmark** [✓] to accept the changes.
- You are then presented with the information screen for the particular Rule you have just created.

Name	Displays the name of the Rule. Also gives you option to change the name if required.
Test	Determines if a condition exists, i.e. If X=0
Action	The action to take when the test has a positive result, i.e. Location ID to University Hospital.
Enabled	Tick box to enable the Rule.



An example of a simple rule is shown below. In this example, the rule will change an entry of S17 to P17 for the Prefix item.

- From the data assignment menu, highlight Prefix and press the **Rules** button.



- Press **Plus** button.

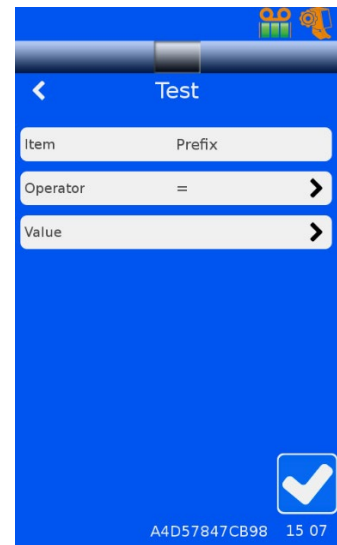


- Type in a name for the rule. It is helpful to create a meaningful name that implies the function of the rule. In this example the rule is named Prefix Change.

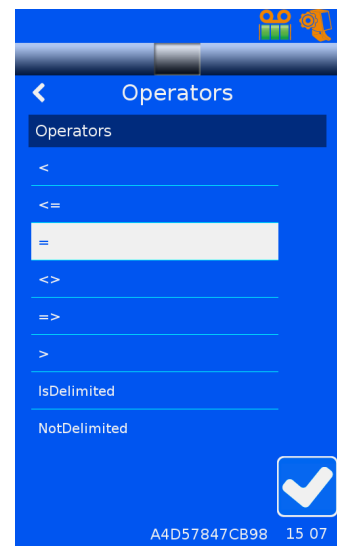


- Press **Checkmark** [✓].

- Press **Test** to define the Test statement.



- Press **Operator** to select the operator.



- Type in a name for the rule. It is helpful to create a meaningful name that implies the function of the rule. In this example the rule is named Prefix Change. Many of the operators are common terms and should be understood. Two operators are defined below:

IsDelimited — This could be defined as “includes”, if an item includes a particular letter, number or character, this test would be positive

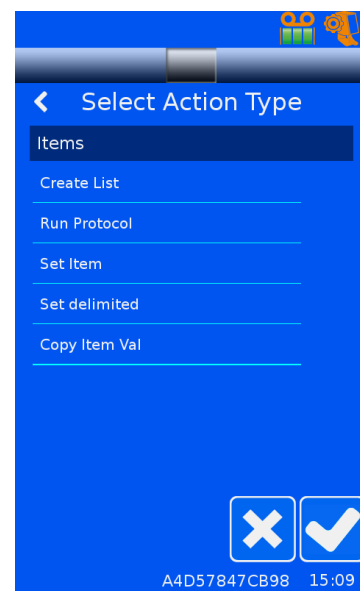
NotDelimited — This could be defined as “does not include”, if an item does not include a particular letter, number or character, this test would be positive

In this example we are using the equals symbol.

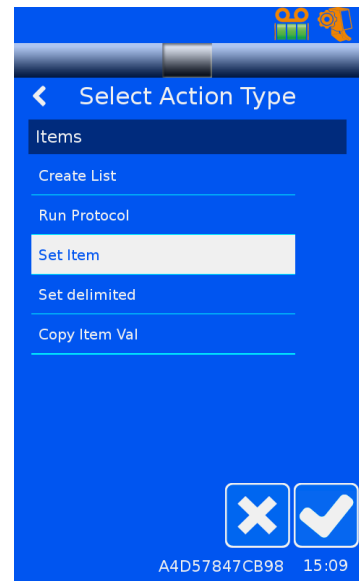


- Press **Checkmark** [✓].
- The next section of the RULE is the action. This is an automatic action based on the rule testing and getting a positive result. If the rule achieves a negative result, no action will be taken by this rule. To Select an action, follow the steps below.
- Press **ACTION** and select the required action:

Create List	Runs through a predefined list.
Run Protocol	Runs a specific Protocol.
Set Item	Sets a value to an item.
Set Delimited	Further delimits an item.
Copy Item Value	Copies a value to a different item.

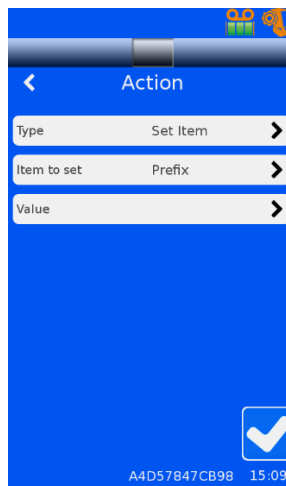


- When action is set, press **Checkmark** [✓].
In this example we selected set item.



- Select Item to set, in this case we selected the Prefix.

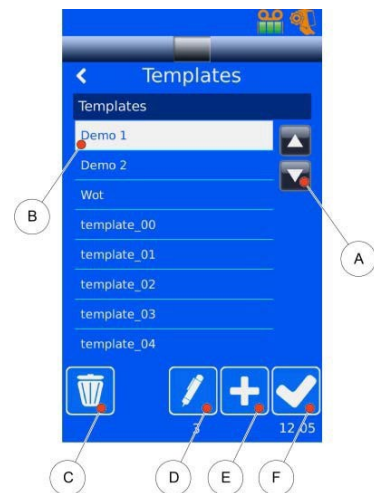
- Select the value and enter the date the item should be set with. In this case, the prefix will be set to P17 when the rule tests positive.



Templates

Adding, Editing and Deleting

A	Scroll buttons (if required).
B	Select item.
C	Delete Selected Item.
D	Edit Selected Item.
E	Add Item.
F	Save and Close.



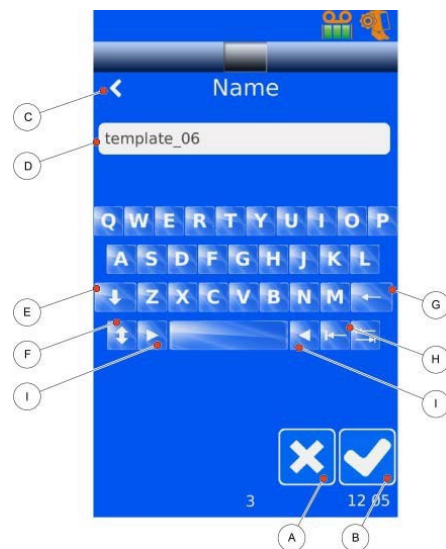
Add a Template

- From the Settings Menu, after entering the Password; Select Data then Templates.

- Click the  to add a Template.

- Change the name of the Template.

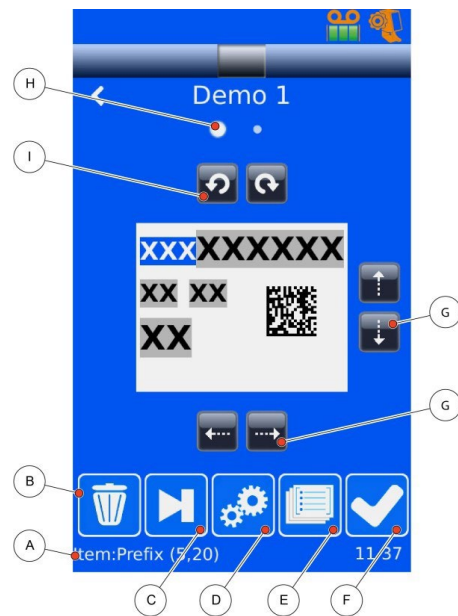
A	Cancel
B	Accept
C	Back Arrow to Return
D	Enter Item Name
E	Upper / Lower case
F	Number and Special Characters
G	Deletes one character
H	Deletes full word
I	Move the cursor



- Press the **Checkmark** [✓] to accept.
- You are then presented with a message box 'Use Translator?'
- Translator is used to populate the data items on the template whilst using a barcode
- Translator is also used to populate the data items into the barcode printed on the template.

Configure Template

A	Name of the item selected
B	Delete
C	Moves the next item
D	Template Settings
E	Template Items
F	Accept Changes
G	Move selection on the slide
H	Page Selection Left button displays positioning screen Right button displays font modifications
I	Rotates the Field by 90 degrees

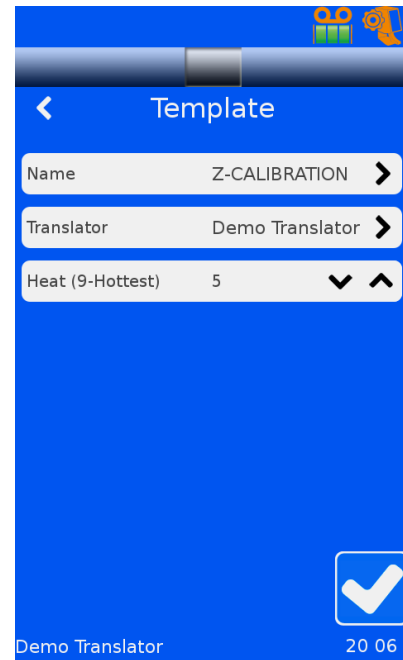


Translator No. Configuration Template

Template Settings

When you press the Template Settings button  , the following screen appears.

Name	Allows the user to change or edit the name of a particular template.
Translator	Allows the user to scan data from a cassette, slide or IQOQ into the data items.
Heat Settings	Adjusts the heat setting for a specific Template.

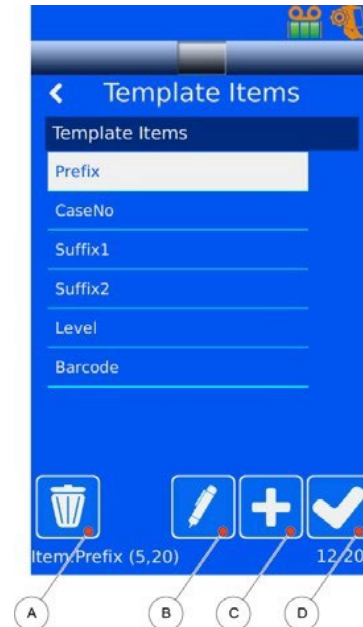


Template Items


Once you have set up the template Settings, you need to add the Items that will be displayed on that Template.

When you press the Template Items button  , the following screen appears.

A	Delete item
B	Edit Item
C	Add Item
D	Accept Changes



Add data Items

When you press the Template Items button  , from the template Items screen, you can then select which items you want to include. Pressing the Edit Selected Item button allows you to access each individual item.

Show on Template	Makes item visible when printed. If field is required for barcode only and not printed on the template, uncheck.
Normal	If checked, makes item normal and able to be populated with information from the scanner.
Incrementor	Makes item a counter field.
Barcode	Makes the item the container for the data held within the barcode when printed.
User Edit	Open field to type data into.



If a barcode is desired on the template, you must have a barcode field added to the template to use a container for the data within the barcode.

Translator	Choose the translator used for the data required.
Symbology	Code128 (Subset A), Data Matrix or QR-Code.
Check digit type	Selection required if checked digit is needed.
Size	Size of the barcode on the template.

The screenshot shows a configuration panel with four rows, each with a label, a value, and a control icon:

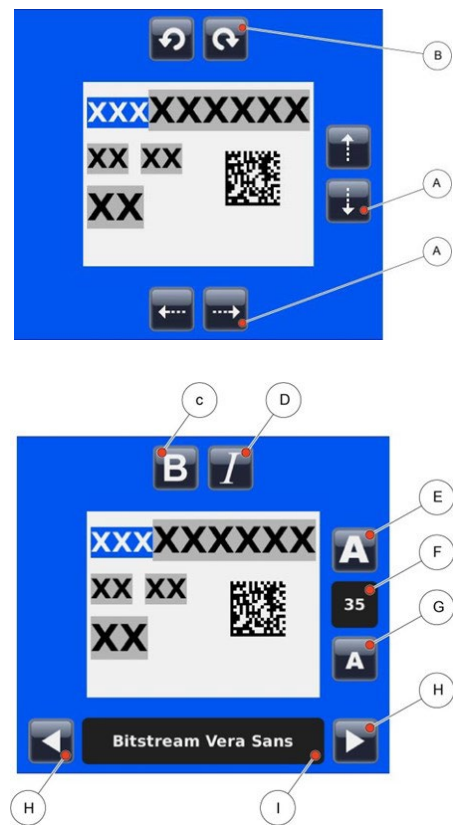
- Translator:** Z-128, with a right-pointing arrow icon.
- Symbology:** Code128 (Subset A), with a right-pointing arrow icon.
- Check digit type:** 0, with up and down arrow icons.
- Size:** A bar chart icon with three bars of increasing height, with up and down arrow icons.

Index	Check digit calculation method
0	No check digit will be computed
1	Standard check digit of the selected barcode type is used
2	Modulo 10 (usually used with Interleaved 2of5)
3	Modulo 43 (suggested for Code39 and Logmars, consist of 1 digit)
4	Modulo 47 (2 digits)
5	Method for DP Leitcode
6	Method for DP Identcode
7	Method for Code11 (1 digit)
8	Method for Code11 (2 digits)
9	Method for USPS Postnet
10	Method for MSI (2 digits)
11	Method for MSI (2 digits)
12	Method for Plessey
13	Method for EAN 8
14	Method for EAN 13
15	Method for UPC A
16	Method for UPC E
17	GS1-128 internal method (Modulo 103)

Index	Check digit calculation method
18	Code128 internal method (Modulo 103)
19	Method for Royal Mail 4 State
20	Mod-11 Method for PZN
21	Mod-11 (using maximum weight 7)
22	Method for EAN 14
23	Method for Korean Postal Authority – Modulo 10
24	Method for Planet – Modulo 10
25	Method for Italian Postal 2/5 (Modulo 10 based)
26	Modulo 36 (ISO/IES 7064) for DPD Barcode
27	Modulo 16 for Codabar Barcode
28	Modulo 10 with Luhn algorithm (for Credit Cards, IMEI etc)
29	Method for VIN (North America)
30	Mod 10 with reverse Luhn algorithm
31	Mod 23 for PPSN
32	Mod 10 for Intelligent Mail Package Barcode
33	Mod-11 (using maximum weight 10)
34	Mod-11 (UPU – Universal Postal union) Method for Swedish Postal Shipment Item ID

Template Editor

A	Arrows, move the field up, down, left and right
B	Rotated the field
C	Makes the text bold
D	Makes the text Italic
E	Increases the size of the characters
F	Shows the text size
G	Decreases the size of the text
H	Changes the selected font
I	Displays the selected font to be used



Printing Images Using a Windows Printer

The slide printer can be set up to print label images designed by external label design software such as Nicelabel or Wasp barcode Writer printing applications. These programs are able to import data and pre-design labels which are then sent to the printer as an image type file. The slide printer uses a standard Windows printer driver to manage the queue of labels between the Network or PC and the slide printer.

The slide printer is electronically signed by Microsoft which can make the installation and configuration of the Windows printer simple and easy. To install the Windows printer, follow the instructions below.

This new driver allows the slide printer to be used with Windows 8, 32 and 64 bit operating systems, Windows 10, 32 and 64 bit operating systems and Windows 7, 32 and 64 bit operating systems. The windows printer can be connected using USB, Ethernet or Wi-Fi depending on the slide printer model.

Note

Connect using Ethernet cable requires the use of a router or Network Switch.

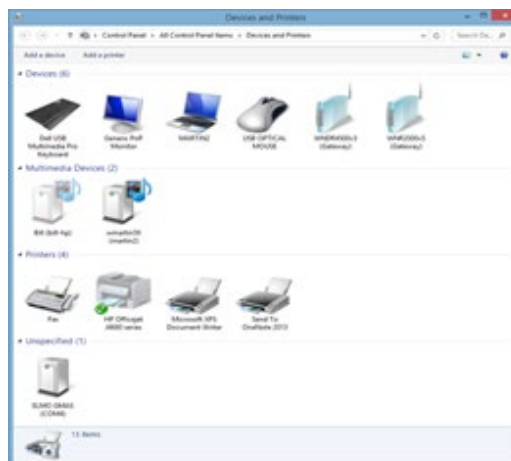
Connection using Crossover cable can be connected directly from PC to Printer.

Using Ethernet cable

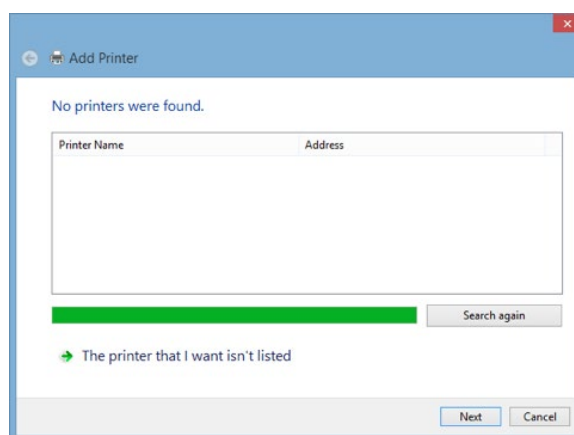
- Connect an Ethernet cable from the slide printer to the router or network switch.
- PC needs to be connected to the router or network switch.
- On the printer, press **Settings**.
- Press **Network**.
- Ensure the boxes next to Connect to Gateway and Connect to Hub are not checked.
- If using a router:
 - Connect to the network by pressing **IP Address**.
 - Ensure the DNS is checked and press the **Checkmark [✓]** button.
 - You should now see an IP Address on the Network screen to the right of IP Address.
 - Restart the printer.
- If using a Network Switch:
 - Connect to the network by pressing **IP Address**.
 - Ensure the **Fixed** is checked and press the **Checkmark [✓]** button.
 - Set the fixed IP Address and press the **Checkmark [✓]** button.
 - You should now see an IP Address on the Network screen to the right of IP Address.
 - Restart the printer.



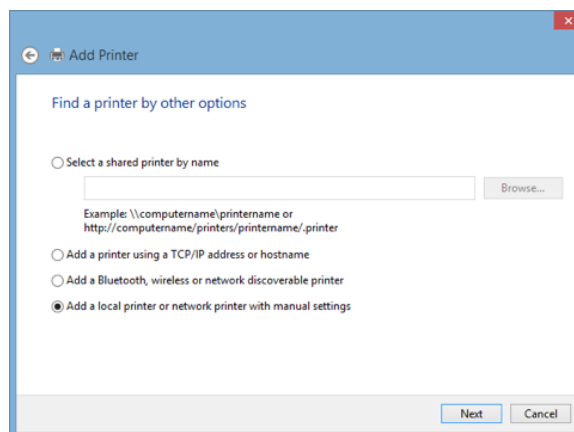
- From the Devices and Printers, press **Add a printer**.



- If the printer is not listed, press the **'The printer that I want isn't listed'** button.



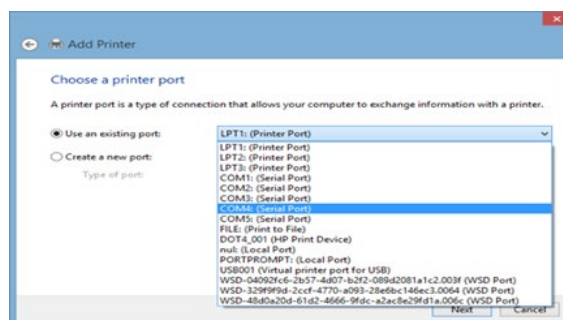
- Select **'Add a local printer or network printer with manual settings'**.



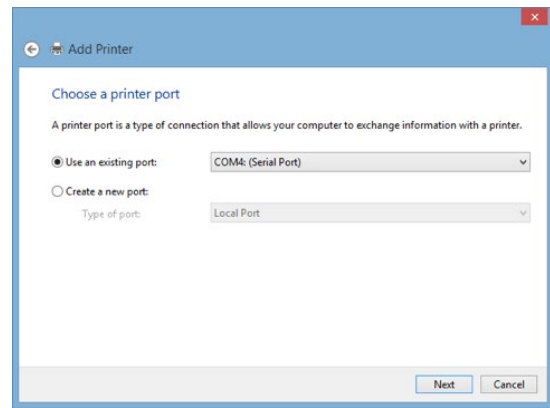
- Select the connection to which the printer is connected (in this example it is Com4).

If you are using Wi-Fi or Ethernet, you may need to create a new port if the printer IP address is not shown.

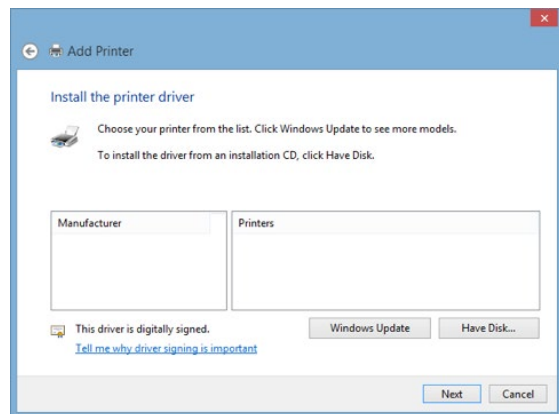
For step-by-step instructions to set up a printer using these other connection methods.



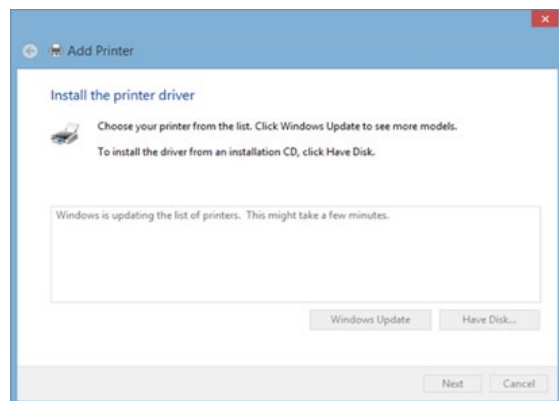
- Press **Next**.



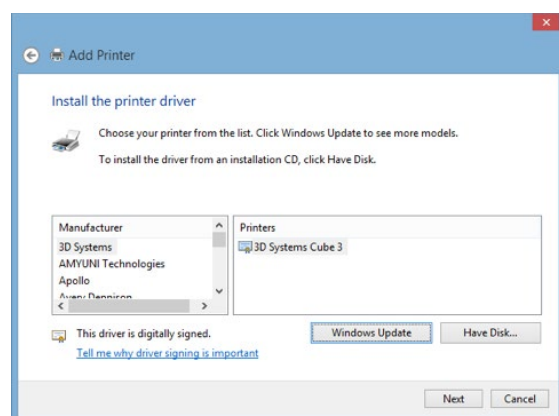
- If the Pyramid printer is not listed, press **Windows Update** button to search the Microsoft site for the correct driver.



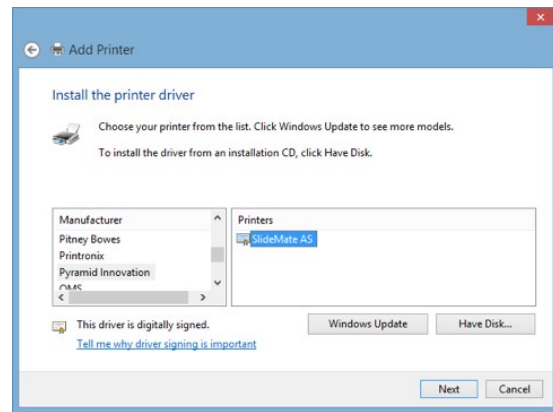
- This update will take a few minutes.



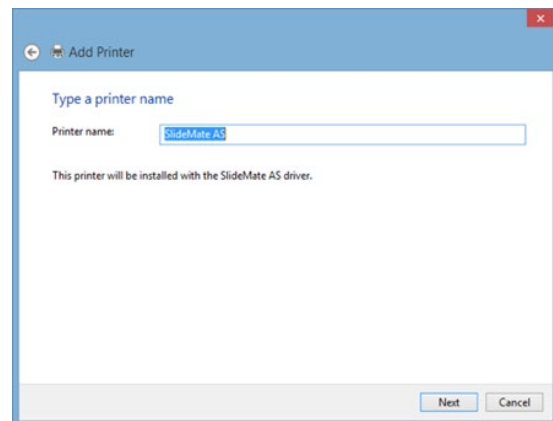
- Once the search is complete, you will see a list of manufacturers and printer models.



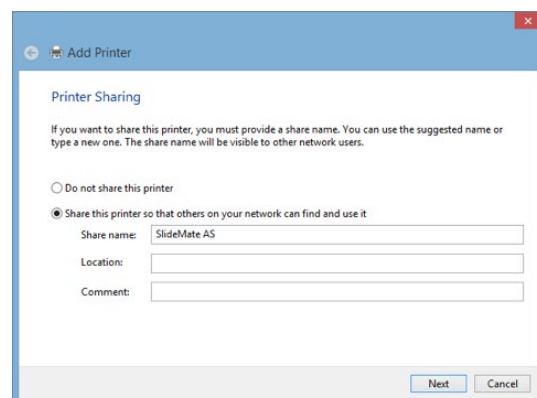
- Select 'Pyramid Innovation' under Manufacturer and the correct printer within the Printers window.



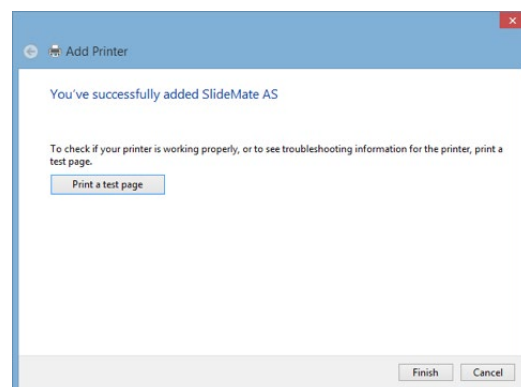
- Type a printer name and press **Next**.



- Press **Next**



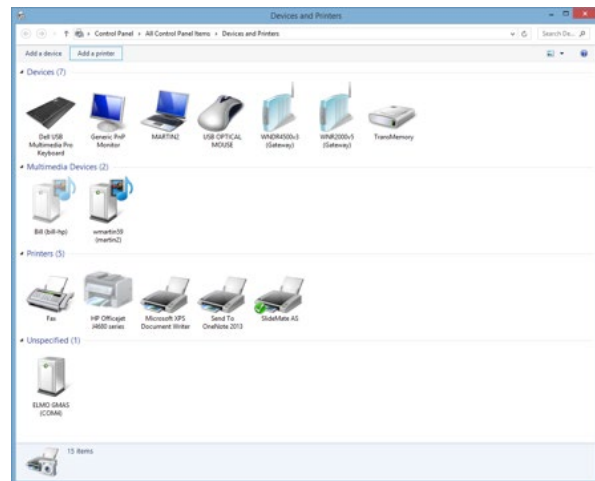
- You may test the printer by pressing the **Print a Test Page** button. You should see a slide appear on the front of the printer and the trash bin should appear.



- If this test print does not appear, power cycle the slide printer and try sending the test print again.



- The printer is now set up and can be used to print slides using many external software programs. You will see the printer shown in the Devices and Printers menu.



Pi USB to Serial Com Port Driver

When connecting the slide printer to a PC using the USB port, it will need to be set up as a Serial-to-USB connection and will need a proper Serial-to-USB driver. When you plug in the USB cable at the PC and slide printer, the Windows operating system will automatically attempt to load a valid driver, which may be labelled Gadget 2.4 or ElmoGmas. The ElmoGmas driver will work fine, but the Gadget 2.4 driver will need updated before use.

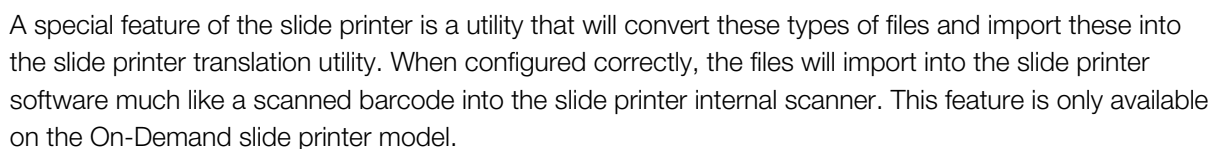
To update this driver, right-click on the device and select properties. In the device menu, select Update Driver and point the installer to the location the driver is located. You can update the ElmoGmas driver using the same method to the Pi USB to Serial Converter. This driver does not work any differently, but will display a label that makes more sense to end users of the system.

Contact your local supplier to gain access to the installation file.

Many laboratories who use paper labels to identify microscope slides use Zebra printers to print the labels. The Zebra printers utilize two methods to print labels.

The LIS system or other label design system creates a label design and sends the label print job to the printer as an image file. In this case, you can set the slide printer up using the Standard.

Some systems send a text file with multiple lines and formatting characters that direct the Zebra printer to properly format the label design. A sample of these types of files are shown below.



- Ensure the slide printer is not connected to the PC.
- On the PC, use the add printer feature within Windows.
- When you are prompted to select a printer type, select GENERIC / TEXT ONLY PRINTER.
- Select the port to which the printer will be connected (this can be altered later).
- Once the Generic / Text only Windows printer is configured, connect the slide printer to the PC.
- Ensure the connection port is set correctly, this can be checked by right-clicking on the Generic / Text only printer and selecting Properties.
- Once the connection is complete, you will need to set up a Translator and Template that convert the data to a finished, printable label.

- Once the translator and template are configured properly, you should be able to send multiple labels to the printer and print.

Chapter 5 – Troubleshooting





Print Quality – Troubleshooting



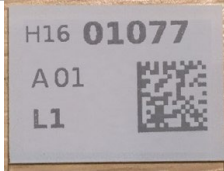
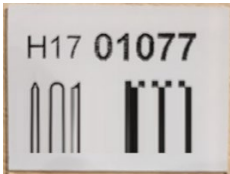
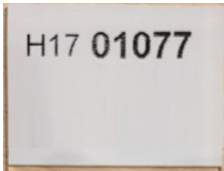
Poor print quality is normally caused by flaws or debris on the printable surface of the slide. To ensure the best print quality, the printable surface must be of uniform thickness across the entire width of the slide, it must be smooth and free of any clumps or dust embedded in the coating.

The quality of the slides printing surface determines the print quality. You cannot improve print quality by changing settings if the slide surface is low quality.

When troubleshooting compare the slides in question against a slide type known to produce good quality and consistent print.

Use the table below to diagnose quality problems.

Error / Symptom	Possible Cause
	Smudging <ul style="list-style-type: none">• Smudging this is a sign that the heat is too high or the print head needs cleaning.• Try reducing the heat setting until it disappears. If it does not disappear there may be some debris on the print head preventing the heat dissipating through the slide surface.• If you have cleaned the print head go through the recovery procedure.
	Light Patches <ul style="list-style-type: none">• This is caused by an uneven or inconsistent surface. Low quality slides, defective slides or slides that are not thermal printable (inkjet) may be the cause.• Do not adjust the heat setting.
	Horizontal Line <ul style="list-style-type: none">• A horizontal line through print is caused by a small bump on the slide.• This causes the entire print head to lift at this point so the effect of the bump is extended to the left and right of the bump. Low quality or defective slides may be the cause.• It can also be caused by the tape being dragged by the print head. This can be a sign that the heat setting is too high. If this is seen repeatedly reduce the heat setting.
	Random Missing Area (Print Surface Intact). <ul style="list-style-type: none">• This is caused by a rough printable surface.• Low quality slides, defective slides or slides that are not thermal printable (inkjet) may be the cause.• Do not adjust the heat setting.

Error / Symptom	Possible Cause
	Group of Spots <ul style="list-style-type: none"> • This may be caused by dust particles on the slide. Keep the slide clean. • Store them in the blue slide cartridge at all times. Avoid handling the slides. Do not remove them from their shrink wrapping until you will be inserting the slides into the blue cartridge. • Do Not adjust the heat setting.
	Vertical Line <ul style="list-style-type: none"> • A line vertically through the entire print is caused by dust or debris on the print head burn line. • If this is seen on every slide the print may need cleaning. Remove the tape and clean the head with a cleaning swab (Part No ***). • If after cleaning the line is still present, the print head is damaged and needs replacing.
	Light Printing <ul style="list-style-type: none"> • Consistent light printing is caused by insufficient heat or slides that are not thermal printable (inkjet). • You may be able to improve quality by increasing the heat setting.
	Vertical lines <ul style="list-style-type: none"> • This is caused by a faulty / poor connection on the ribbon cable that links the print head to the circuit board. • Try gently pushing the ribbon cable into the connector on the circuit board and print head. • Try reconnecting the ribbon cable and ensure the connectors are fully connected. • Replace the ribbon cable if the issue persists. • Turn the power off before doing the above.
	Missing print / data <ul style="list-style-type: none"> • This can be caused by a faulty / poor connection on the ribbon cable that links the print head to the circuit board. You may see this and the vertical lines if the connection is faulty. • Missing data can be due to incorrect data being sent to the printer, so it is important to check this first. • Check that the data sent was correct and that the image displayed was correct. • Try gently pushing the ribbon cable into the connector on the circuit board and print head. • Try reconnecting the ribbon cable and ensure the connectors are fully connected. • Replace the ribbon cable if the issue persists. • Turn the power off before doing the above.

Slide Requirements

Slides must have a coated frosting. The frosted coating should cover 20 mm of the length of the slide. The coating must be of uniform thickness across the entire width of the slide. The SlideMate AS Slide Printer uses thermal transfer print technology. This print technology requires stricter standards on the surface finish and cleanliness of the slide's frosted coating compared to slides that are used with ink jet technology printers. The coating must be smooth and free of any clumps or dust embedded in the coating or print defects will occur.

Ribbon Burn – Possible Causes

- Heat setting set too high.
- Follow the Print Quality Setup. Use a slide known to be good quality as a sanity check.
- Incorrect resistance set for the installed print head.

Check the resistance on the print head is the same as entered on the printer settings.

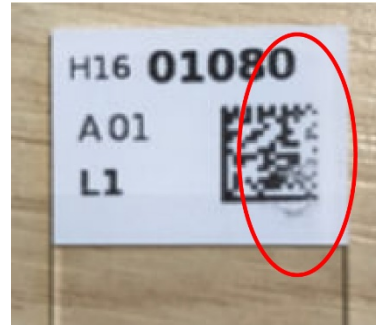
- Build-up of debris on the print head.

Uneven slide surface can cause local tape burn if the head is not in contact with the slide surface.

The example image shows light print down one side and tape burn under it. This will cause melted tape to build up on the head.

If the print head has debris stuck on it this can move and hold the head away from the slide causing an air gap. The heat cannot transfer to the slide resulting in the head over-heating.

Take the ribbon out and inspect the print head from the top and bottom.



- Print head printing when not in full contact with the slide.

This can be caused by debris on the print head. It can also be as a result of a slide jam.

It is important that no more than 10 slides are allowed to collect in the collection guide.

The printer cannot detect a build-up of slides on the collection guide. It detects the slide exiting the printer.

If slides are allowed to back up they eventually prevent slides exiting the printer and causing a jam.

If a slide cannot exit the print mechanism the next slide may drop through the bottom stop and be in the wrong position for printing. This will cause the print head to print in air and over heat resulting in melted or broken ribbon.

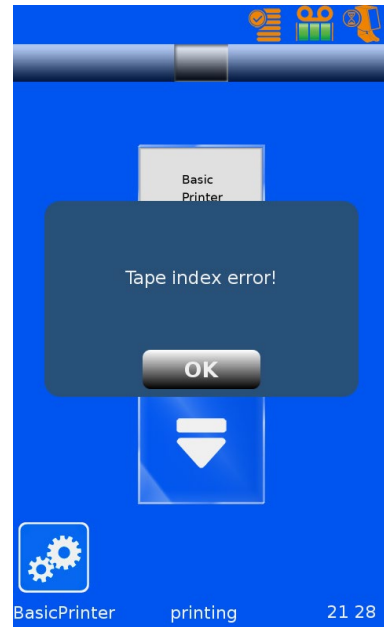


Error Messages

The slide printer uses standard error messages to guide the user through expected problems as the slide printer is operated. The messages are intended to alert the user that the slide printer has encountered a problem and to guide the user through recovery and continued operation. Some errors or conditions may require a power cycle of the slide printer or PC.

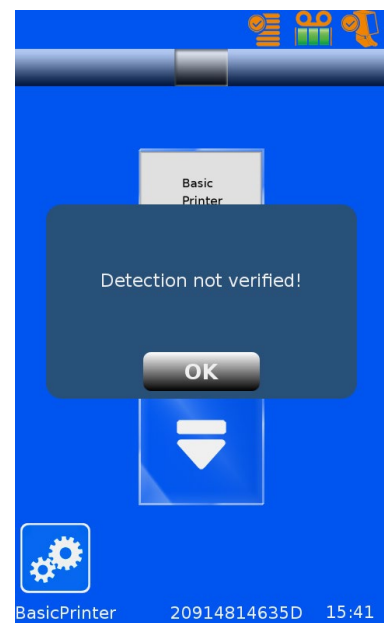
Ribbon Index Error

- If the ribbon fails to move (the encoder sees no motion) an error will be displayed.
- Pressing the **OK** button will home all motors and allow the operator to restart printing.
- Potential causes for this error are:
 - The printer has run out of ribbon
 - The ribbon has broken
 - The encoder wheel is frozen
- When this error occurs, it will be normal to have blank slides in the output tray.



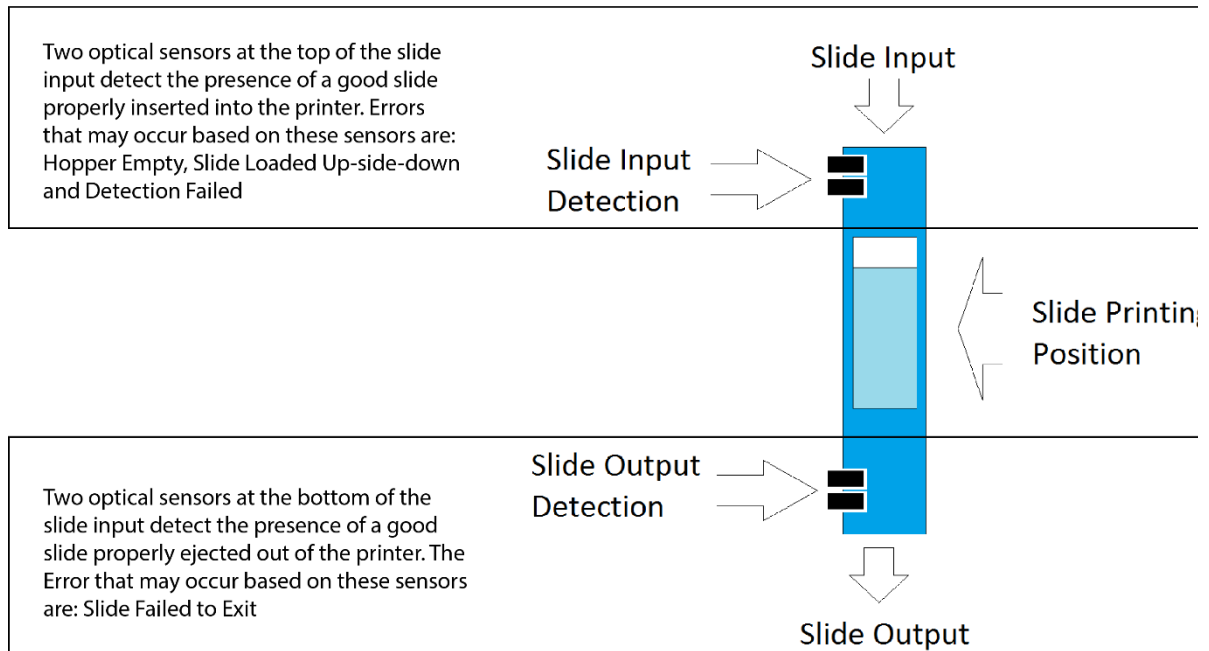
Detection not verified

- A feature to alert the operator to a slide which has been inserted or loaded into the printer and orientation or valid slide type cannot be determined.
- When this situation occurs, a Detection not verified message will appear. To reset this message, the operator should press **OK**, any slide inside the printer will be ejected without printing.



Slide Handling Errors

There are several ways in which the slide printers attempt to determine if a slide has been inserted and ejected properly. Sensors within the printer mechanism use optics to identify a proper type slide and that the slide has been inserted and delivered to the output chute correctly. If any of these optic sensors do not detect the correct movement, an error message will be displayed. These messages usually indicate a poor or defective slide.



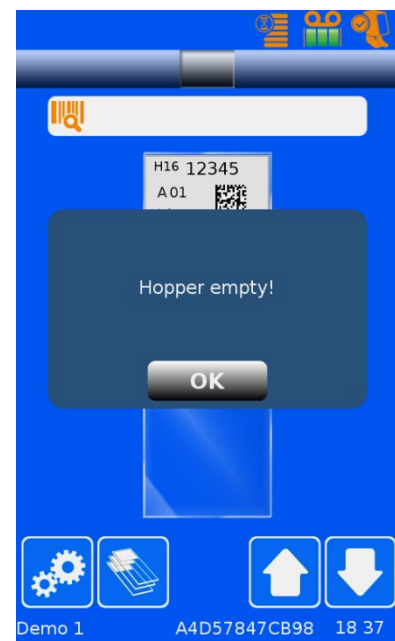
Error reported as Hopper empty

When does this occur?

- Nothing is detected at the Entry Optical sensors when the slide dispense hopper has operated to dispense a slide.

Potential causes:

- Slide dispense hopper is out of slides.
- A slide without a good printable tab has been dispensed.
- Optical sensor is not working correctly.
- Slide fallen off dispense arm before reaching slide opening for the printer.
- Slide did not fall off SDS arm into the opening for the printer.



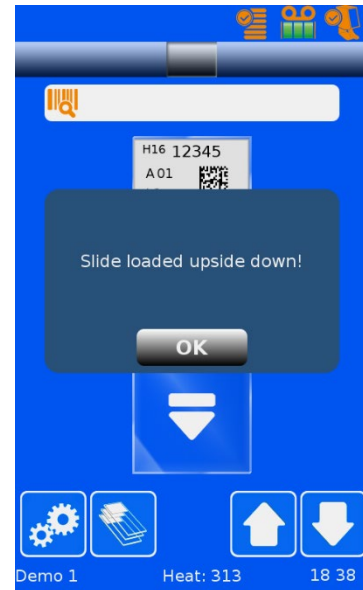
Error reported as Slide loaded upside down!

When does this occur?

- When the slide printing pad is detected immediately following the leading edge of the slide.

Potential causes:

- Slides are loaded in the hopper with the printing pad at the front of the hopper.
- A slide with specialized silkscreen print has been inserted that are not able to be used on the printer.
- Optical sensor is dirty.
- Optical sensor is not working correctly.



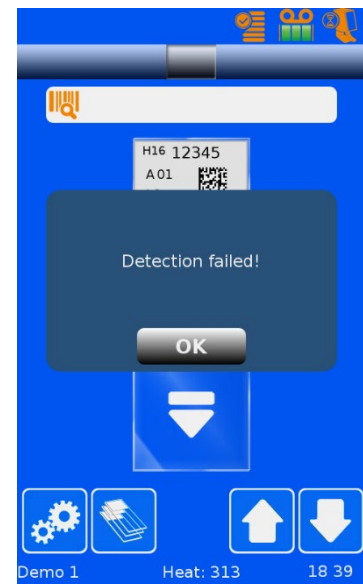
Error reported as Detection failed!

When does this occur?

- When the Slide Input Optic sensors detect something has entered the printer, but cannot determine if the slide was inserted properly.

Potential causes:

- Slides a thin painted surface.
- The slide may be damaged.
- A slide with specialized silkscreen print has been inserted that are not able to be used on the printer.
- Optical sensor is not working correctly.



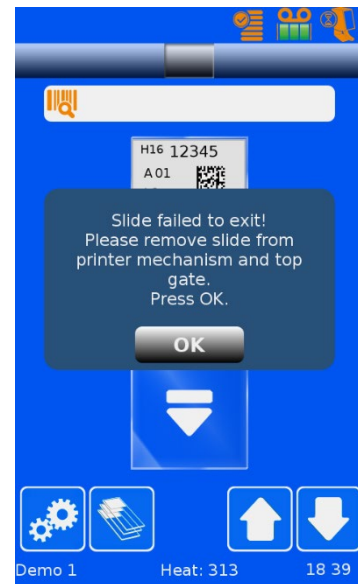
Error reported as Slide failed to Exit!

When does this occur?

- When the Slide Output Optic sensors do not detect the slide exiting the printer following a successful print.

Potential causes:

- The ribbon is not routed correctly around the print head pin.
- Too much heat causing the ribbon to burn.
- Wax or glass debris preventing the slide to fall out.



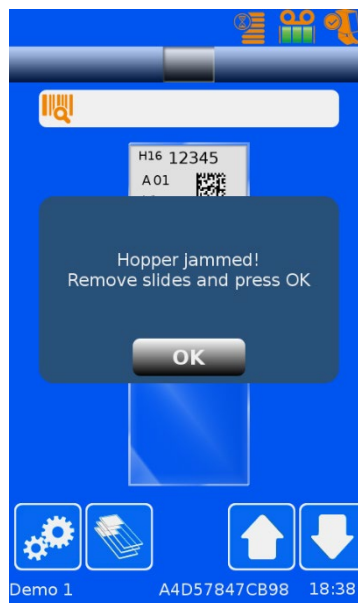
Error reported as Hopper jammed!

When does this occur?

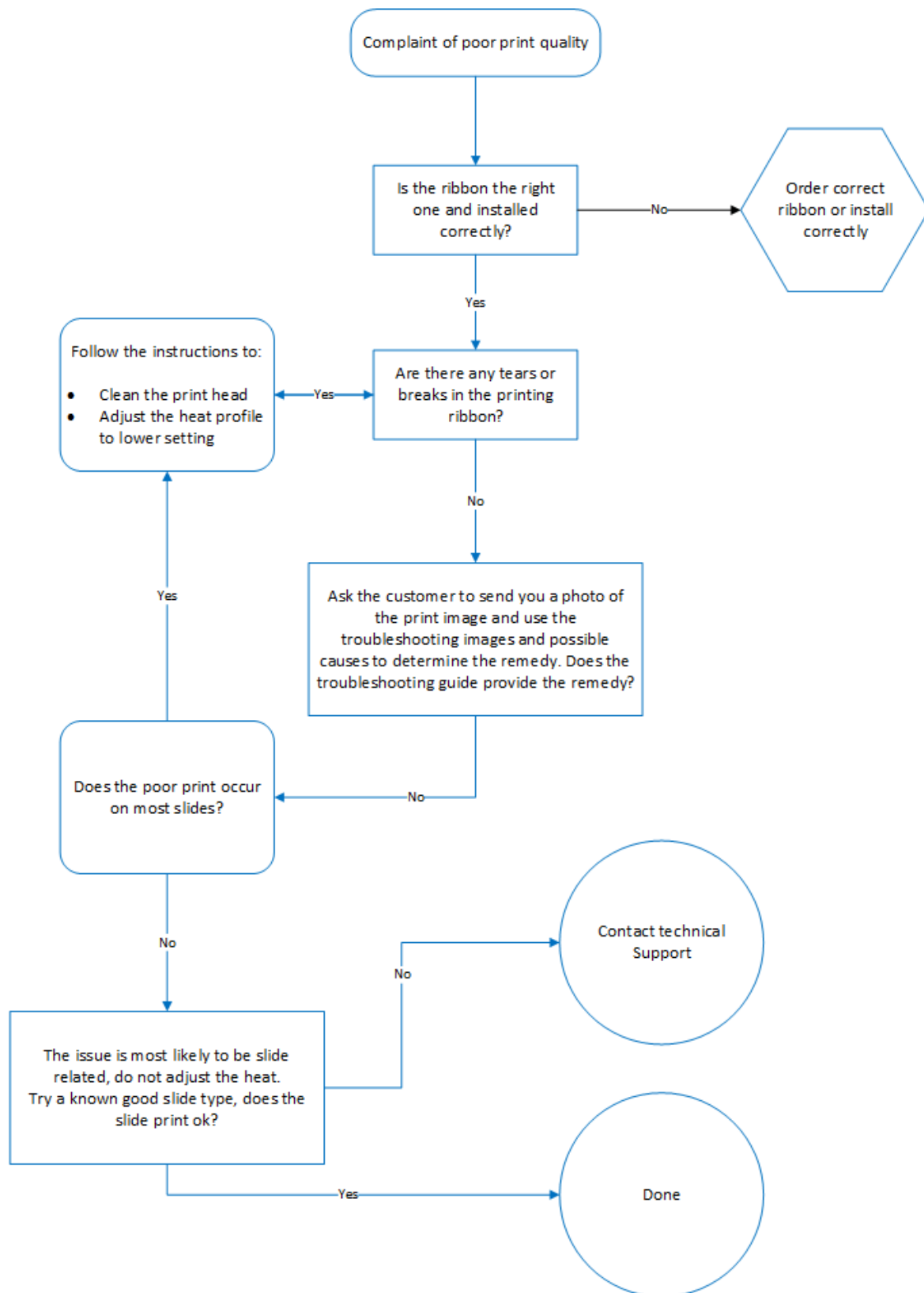
- When the slide dispense motor cannot drive the dispense assembly in or out.

Potential causes:

- Slides are stuck together, for specific types of slides, this may occur frequently.
- The dispense hopper is not fully seated on the slide delivery system.
- The slide dispense motor is damaged.



Check for any slides that may be jammed in the hopper or chute before pressing **OK**.



Troubleshooting Table

Error / Symptom	Possible Cause	Remedy
Screen is blank on switch on	Mains lead is not connected	Connect the mains lead to the instrument, refer to Electrical Connections and Start-Up procedure.
	Mains socket is not switched on	Switch on the mains socket
	Fuses in mains lead have blown	Change the fuses in the mains lead adaptor
Touch screen does not respond to touch	Touch screen may be faulty	Reset the instrument by turning off then back on. If fault persists then call the EpreDia Service Department.
Instrument does not print correctly into the slide	The slides may be inserted back to front	Check slides are correctly orientated in the instrument.
	The ribbon has run out	Change the ribbon in the instrument, refer to Changing the Thermal Transfer Ribbon section.
	The ribbon may be fitted incorrectly in the instrument	Remove the ribbon can refit correctly, refer to Fitting the Thermal Transfer Ribbon Roll section.
	The print head may need cleaning	Clean the print head in the instrument, refer to Cleaning the Print Head section.
Slides jam in the instrument	The slides being used may not be approved for use on the instrument	Check you are using the approved slides in the instrument, refer to Appendix C – Approved Slides.
	Ribbon may be fitted incorrectly	Remove the ribbon and refit correctly, refer to Fitting the Thermal transfer Ribbon Roll section.
	There may be an obstruction in the slide print mechanism.	Carefully attempt to remove the obstruction.



If you have any problems, contact your local EpreDia Service Department.

Appendices

Appendix A – Consumables and Accessories

Consumables and Accessories List

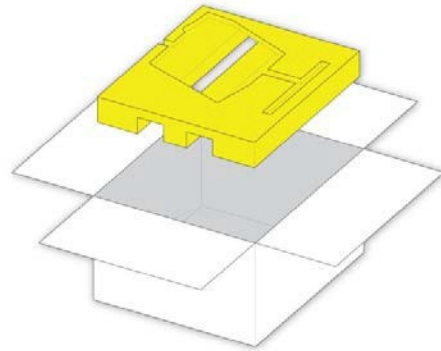
Description	Part Number
Thermal Transfer Ribbon	A83910001
Power Adaptor Input: 100-240V ~ 1.1A, 50-60 Hz Output: 24V DC1.5A	A83920013
Mains Lead UK	A83920012
Mains Lead EU	A83920011
Mains Lead USA	A83920010
Screen Guard	A83910007
Gateway Software Single Licence	A83910005
Gateway Software Multi Licence	A83910009
Slide Delivery System	A83910002
Hopper for delivery system	A83920016
Cleaning kit for print head	A83910008
Keyboard	B81310004

Note

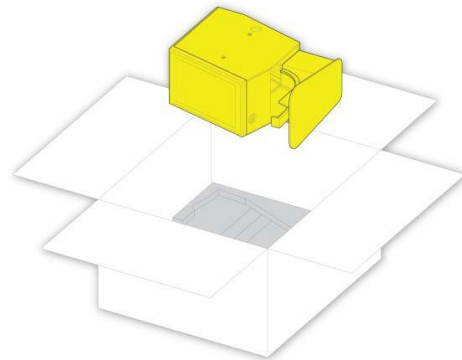
Only use the EpreDia approved accessories in the above table.

Appendix B – Repacking Instructions

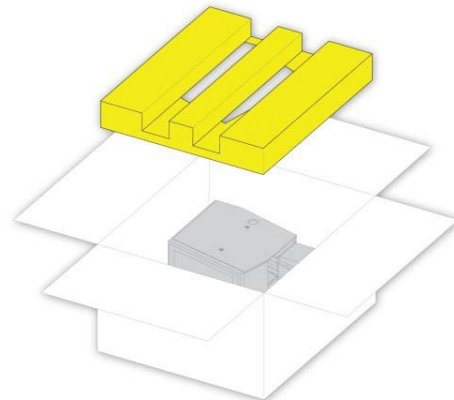
- Ensure the lower inner packaging is in place inside the packaging box.



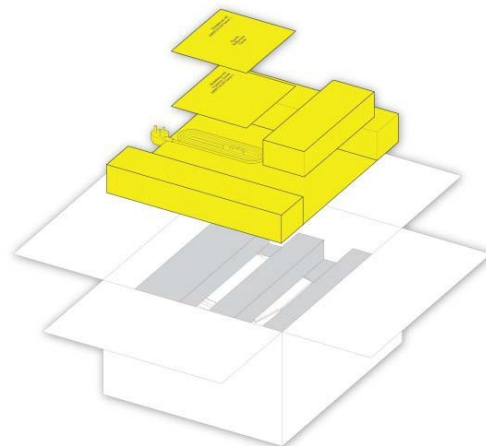
- Place the SlideMate AS instrument gently into the box ensuring it sits correctly in the cut-out of the foam packaging.



- Place the Upper inner foam packaging on top of the SlideMate AS instrument and gently press into place.



- Place the upper packing into the box and place all the accessories into the box.



Appendix C – Approved Slides

Recommended slides

The following slides have been validated on SlideMate AS and SlideMate Pro:

Adhesion Slides

- EpreDia SlideMate Plus Adhesion Microscope Slides

Non-Adhesion Slides

- EpreDia SlideMate Microscope Slides

Approved slides

The following slides are also approved for use on SlideMate AS and SlideMate Pro:

Adhesion Slides

- EpreDia Superfrost Plus Adhesion Microscope Slides
- EpreDia Colorfrost Plus Adhesion Microscope Slides
- EpreDia Superfrost Excell Adhesion Microscope Slides
- EpreDia Superfrost Plus Gold Adhesion Microscope Slides
- EpreDia Polysine Adhesion Microscope Slides
- EpreDia Permafrost Adhesion Microscope Slides

Non-Adhesion Slides

- EpreDia Superfrost Microscope Slides
- EpreDia Colorfrost Microscope Slides
- EpreDia Permafrost Microscope Slides

Appendix D – Icon Glossary

About Printer



User Settings



Data Settings



Data Items



Data Translators



Date & Time



Display Settings



General Settings



Hub Settings



International



Keyboard Settings



Network Settings



Printer Busy



Printer Ready



Printer Setup



Printer Settings



Scanner Settings



Software update



Sound Settings



Ribbon Full



Ribbon Low



Ribbon Very Low



Templates



Hopper Connected

Ready



Busy



Gateway Connected

Ready



Busy



Index

A

<i>Advanced Operation</i>	<i>44</i>
<i>Items.....</i>	<i>44</i>
<i>Appendices.....</i>	<i>83</i>
<i>Approved Slides</i>	<i>85</i>
<i>Consumables and Accessories.....</i>	<i>83</i>
<i>Icon Glossary</i>	<i>86</i>
<i>Repacking Instructions</i>	<i>84</i>

B

<i>Basic Operation</i>	<i>28</i>
<i>Basic Operation.....</i>	<i>28</i>
<i>Collection Guide.....</i>	<i>28</i>
<i>Keep slides dry and free of wax</i>	<i>29</i>
<i>Slide Jams</i>	<i>28</i>

C

<i>Changing the Thermal Transfer Ribbon</i>	<i>21</i>
<i>Removing the Thermal Transfer Ribbon</i>	<i>21</i>
<i>Cleaning and Maintenance.....</i>	<i>23</i>
<i>General</i>	<i>23</i>
<i>Cleaning the Print Head</i>	<i>26</i>
<i>Company Information.....</i>	<i>3</i>
<i>Connecting the Slide Delivery System.....</i>	<i>10</i>
<i>Contact address</i>	<i>3</i>
<i>Creating a Protocol</i>	<i>33</i>
<i>Creating a Sequence of Slides.....</i>	<i>32</i>

D

<i>Data.....</i>	<i>40</i>
<i>Deleting a Protocol.....</i>	<i>35</i>
<i>Distributor</i>	<i>3</i>

E

<i>Editing Label Field Data.....</i>	<i>31</i>
<i>Error Messages.....</i>	<i>77</i>
<i>Detection not verified.....</i>	<i>77</i>

<i>Ribbon Index Error.....</i>	<i>77</i>
<i>Slide Handling Errors</i>	<i>78</i>

F

<i>Fitting the Thermal Transfer Ribbon Roll.....</i>	<i>22</i>
--	-----------

G

<i>General Menu.....</i>	<i>37</i>
--------------------------	-----------

H

<i>Hopper Settings</i>	<i>39</i>
<i>How to change heat settings</i>	<i>20</i>

I

<i>Identification of Parts</i>	<i>11</i>
<i>Installation and Setup</i>	<i>13</i>
<i>Back Panel and Connections.....</i>	<i>16</i>
<i>Electrical Connections and Start-Up Procedure</i>	<i>16</i>
<i>Installation and Setup.....</i>	<i>13</i>
<i>IQOQ Print Test Slide.....</i>	<i>18</i>
<i>Locating the SlideMate AS.....</i>	<i>15</i>
<i>Printer Status Indication.....</i>	<i>17</i>
<i>Unpacking.....</i>	<i>14</i>
<i>Installation of New Printer Software.....</i>	<i>24</i>
<i>Threshold Setting.....</i>	<i>25</i>
<i>Introducing SlideMate AS</i>	
<i>Introduction</i>	<i>8</i>
<i>Introducing SlideMate AS* MERGEFORMAT</i>	<i>8</i>
<i>Items</i>	
<i>Add Data Item</i>	<i>45</i>
<i>Adding, Editing and Deleting</i>	<i>44</i>
<i>Deleting a Data Item</i>	<i>47</i>
<i>Editing a Data Item</i>	<i>46</i>

M

<i>Main User Interface</i>	<i>29</i>
----------------------------------	-----------

<i>Main User Interface with Slide Delivery System connected.....</i>	<i>30</i>
--	-----------

N

<i>Network.....</i>	<i>36</i>
---------------------	-----------

O

<i>Object Hierarchy</i>	<i>43</i>
<i>Optional Slide Delivery System</i>	<i>9</i>

P

<i>Paper Label Printer Replacement</i>	<i>72</i>
<i>Pi USB to Serial Com Port Driver.....</i>	<i>71</i>
<i>Print Head Recovery Process.....</i>	<i>26</i>
<i>Print Quality – Ribbon Burn – Possible Causes</i>	<i>76</i>
<i>Print Quality – Troubleshooting</i>	
<i>Slide Requirements</i>	<i>75</i>
<i>Print Quality Setup</i>	<i>19</i>
<i>Print Head Heat Settings</i>	<i>19</i>
<i>Slide Requirements</i>	<i>19</i>
<i>Printer.....</i>	<i>38</i>
<i>Printing Images Using a Windows Printer</i>	<i>66</i>
<i>Using Ethernet cable</i>	<i>66</i>

R

<i>Routine Maintenance</i>	<i>27</i>
----------------------------------	-----------

S

<i>Safety Information</i>	<i>6</i>
---------------------------------	----------

<i>Chemical Safety.....</i>	<i>7</i>
<i>Environment</i>	<i>7</i>
<i>General Safety</i>	<i>6</i>
<i>Introduction</i>	<i>6</i>
<i>Warranty Statement.....</i>	<i>7</i>
<i>Saving a Protocol.....</i>	<i>34</i>
<i>Symbols.....</i>	<i>3</i>
<i>System Specifications</i>	<i>12</i>
<i>Electrical Specifications.....</i>	<i>12</i>
<i>Environmental Specifications.....</i>	<i>12</i>
<i>Mechanical Specifications.....</i>	<i>12</i>
<i>Print Specifications</i>	<i>12</i>

T

<i>Templates</i>	<i>60</i>
<i>Add a Template</i>	<i>60</i>
<i>Add data Items.....</i>	<i>62</i>
<i>Template Editor.....</i>	<i>65</i>
<i>Adding, Editing and Deleting.....</i>	<i>60</i>
<i>Template Items.....</i>	<i>62</i>
<i>Template Settings.....</i>	<i>61</i>
<i>Touch Panel Administration Configuration Menus ..</i>	<i>35</i>
<i>Translators</i>	<i>48</i>
<i>Assignment Order.....</i>	<i>52</i>
<i>Delimiters.....</i>	<i>50</i>
<i>Rules.....</i>	<i>55</i>
<i>Translators for Data Items.....</i>	<i>48</i>
<i>Translators without Delimiters</i>	<i>53</i>
<i>Troubleshooting</i>	<i>73</i>
<i>Print Quality – Troubleshooting.....</i>	<i>73</i>
<i>Troubleshooting Table.....</i>	<i>82</i>



www.epredia.com



**Tudor Road, Manor Park
Runcorn, WA7 1TA
United Kingdom
+44 (0) 800 018 9396
+44 (0) 1928 534 000**

**4481 Campus Drive
Kalamazoo, MI 49008
United States
+1 (800) 522-7270**



Enhancing precision
cancer diagnostics

Document Approvals
Approved Date: 09 sep 2021

Task: Approval Verdict: Approve	Christa Marshall, Global Program Training Manager (christa.marshall@epredia.com) Management Approval 09-Sep-2021 13:57:06 GMT+0000
Task: QA Approval Verdict: Approve	Christa Marshall, Global Program Training Manager (christa.marshall@epredia.com) Quality Assurance Approval 09-Sep-2021 13:57:21 GMT+0000