



265GSX
265Lt

Copyright Statement

Copyright (c) 2000 DEK Printing Machines Limited. All Rights Reserved.

Trademark Acknowledgment

DEK AutoFlex, FormFlex, Vortex and ProFlow are registered trademarks of DEK Printing Machines Limited.

Microsoft and MS-DOS are registered trademarks of Microsoft Inc.
Windows and Windows NT are trademarks of Microsoft Inc.

All other brand and product names are trademarks or registered trademarks of their respective holders.



265GSX
265Lt

CONTENTS

265 GSX/Lt User Manual

MANUAL ERRORS

MANUAL CHANGE REQUEST FORM

DEK WORLDWIDE

MACHINE PROGRAMMING

INTRODUCTION	1.1
STAGE 1	1.2
STAGE 2A	1.6
STAGE 2B	1.8
STAGE 3	1.9
STAGE 4A	1.11
STAGE 4B	1.15
STAGE 5A	1.16
STAGE 5B	1.18
STAGE 6A	1.22
STAGE 6B	1.30
STAGE 6C	1.37
STAGE 6D	1.44
STAGE 6E	1.52
STAGE 6F	1.59
STAGE 7	1.71
STAGE 8	1.84
STAGE 9	1.88
STAGE 10	1.89
MENU PARAMETERS	1.92
SPC CONFIGURATION	1.107
STATUS PAGE	1.113

SET PREFERENCES

INTRODUCTION	2.1
SET PREFERENCES MENU	2.2
PREFERENCES	2.3

HOST COMMUNICATIONS

COMMS PROTOCOL OPTIONS	3.1
IP ADDRESS CONFIGURATION	3.4
HOST COMMS	3.8

ERROR MESSAGES

INTRODUCTION	4.1
ERROR RECOVERY	4.2
ERROR MESSAGE LISTING	4.3

DIAGNOSTICS

INTRODUCTION	5.1
SYSTEM	5.3
PRINT HEAD	5.14
PRINT CARRIAGE	5.16
PROFLOW	5.18
SQUEEGEE	5.20
CAMERA AXES	5.22
RAIL SYSTEM	5.25
PASTE DISPENSE SYSTEM	5.28
SCREEN ALIGNMENT	5.30
SCREEN CHANGE (265GSX)	5.32
SCREEN CHANGE (265Lt)	5.34
SCREEN CLEANER	5.35
RISING TABLE	5.37
FOREIGN MACHINE INTERFACE	5.40
AUTOFLEX TOOLING (STANDARD)	5.42
AUTOFLEX TOOLING (FINE PITCH)	5.44

MONITOR

INTRODUCTION	6.1
LOG ON/OFF	6.2
HOST COMMS	6.3
CLEAR BATCH	6.4
BATCH LIMIT	6.5
PERFORM DISPLAY	6.6
EVENT DISPLAY	6.7
SYSTEM DISABLE	6.8

HOUSE KEEPING

INTRODUCTION	7.1
SET DATE	7.2
SET TIME	7.3
PRINT DATA	7.4
COPY DATA	7.6
DELETE DATA	7.9

2Di INSPECTION

MODULE OVERVIEW	8.1
2Di SETUP	8.14
SETUP TIPS.	8.37
OPTIONS AFTER AN INSPECTION ALARM	8.38
IMAGE RECORDING	8.40
MENU PARAMETERS	8.41

CONSUMABLE REPLENISHMENTS

INTRODUCTION	9.1
PASTE LOADING.	9.2
BLUE UNDERSCREEN CLEANER	9.18
VORTEX UNDERSCREEN CLEANER	9.34
SQUEEGEES	9.47
PROFLOW	9.50

MANUAL ERRORS

INFORMATION IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.

NO PART OF THIS MANUAL MAY BE REPRODUCED, TRANSMITTED IN ANY FORM OR MEANS, ELECTRONICALLY OR MECHANICALLY, INCLUDING PHOTOCOPYING AND RECORDING, FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF DEK PRINTING MACHINES LTD.

EVERY EFFORT HAS BEEN MADE DURING THE COMPOSITION OF THIS MANUAL TO ENSURE THAT THE INFORMATION HAS BEEN CLEARLY PRESENTED AND CORRECT IN ALL RESPECTS.

IF DURING THE USE OF THIS MANUAL ERRORS OR OMISSIONS ARE FOUND, OR THE READER CONSIDERS THAT IMPROVEMENTS ARE NECESSARY TO OVERCOME ANY AMBIGUITY OR INACCURACIES, A **COPY** OF THE FORM OVERLEAF SHOULD BE COMPLETED AND EITHER FAXED OR FORWARDED TO THE ADDRESS BELOW, ACCOMPANIED WITH A **COPY** OF THE RELEVANT PAGE AND/OR FIGURE OF THE MANUAL WITH THE RECOMMENDATION.

Quality Manager
DEK Printing Machines
11 Albany Road
Granby Industrial Estate
Weymouth
Dorset DT4 9TH
England

Tel: +1305 760760

Fax +1305 760123

MANUAL CHANGE REQUEST FORM

No.	
------------	--

COMPANY:			
ORIGINATOR:		DATE.	
MACHINE:	TYPE.	SER No.	SOFTWARE.
MANUAL CHAPTER/FIGURE REF:			
RECOMMENDATION:			
ENCLOSURES:			

INTERNAL USE ONLY		
MANUAL CHANGE:	ACCEPTED.	REJECTED (State Reason)
PRIORITY:	URGENT.	NEXT ISSUE
CHANGE DETAILS:		
OTHER MANUALS AFFECTED:		
CHANGE BY (Name):		
AUTHORIZED BY:		DATE

COMPLETED AMENDMENT:	MANUAL/CHAPTER ISSUE DATE.
----------------------	----------------------------

DEK WORLDWIDE
SALES AND SERVICING

<http://www.dek.com>

DEK UK**Weymouth HQ**

DEK Printing Machines Limited
Granby Industrial Estate
Weymouth
Dorset, England. DT4 9TH

Tel: Sales +1305 760760

Tel: Call Centre +1305 208322

Fax: Sales +1305 208389

Fax: Call Centre +1305 208382

E-mail: sales@dek.com

callcentre@dek.com

DEK FRANCE

DEK France
Parc des Barbanniers
4 Allee de Carre
92230 Gennevilliers
France

Tel: + 47921876

Fax: + 47921878

DEK GERMANY

DEK Printing Machines GmbH
Theodor-Heuss-Str. -57
61118 Bad Vibel
Germany

Tel: + 6101 5227-0

Fax: + 6101 5227 17

E-mail: pdiehl@dek.com

DEK CENTRAL EUROPE

DEK Central Europe
9027 Gyor
Gesztenyefa Ut 4
Hungary

Tel: +36 96 506960

Fax: +36 96 506961

Email: stechau@dek.com

DEK BENELUX

Visit: Henri Wijnmalenweg 6
5657 EP Eindhoven
The Netherlands

Post: P.O. Box 7131
5605 JC Eindhoven
The Netherlands

Tel: + 31 40 2350788

Fax + 31 40 2350079

E-mail: mlaken@dek.com

DEK USA

East

DEK USA Inc. 8 Bartles Corner Road
Building #200
Flemington
NJ USA 08822

Tel: + 908 782 4140

Fax: + 908 782 4774

E-mail: mshermock@dek.com

West

DEK USA West Coast
487 Las Coches Street
Milpitas
CA 95035
USA

Tel: + 408 934 7320

Fax: + 408 934 7325

North Central

DEK USA North Central
1000 East State Parkway
Unit K
Schaumburg
IL. 60173
USA

Tel: + 847 843 3847

Fax: + 847 843 2750

DEK ASIA PACIFIC

Singapore

DEK Asia Pacific Pte Ltd
10 Ang Mo Kio Street 65
Techpoint
Unit 01-05
Singapore 569059

Tel: + 484 7010

Fax: + 484 7011

E-mail pkoh@dek.com

Taiwan

DEK Printing Machines Taiwan Branch
3F-2, No 51, Sec 2, Keelung Road
Taipei
Taiwan ROC

Tel: + 22 7394266

Fax: + 22 7394228

E-mail: dektwn@ms14.hinet.net

Japan

DEK Japan Ltd
Shimizu Building 1F
5-15, 2-Chome
Waseda
Misato-city
Saitama-Prf
341-0018
Japan

Tel: + 81-489-50-3750

Fax: + 81-489-58-7951

Shanghai

DEK Printing Machines Ltd
Shanghai Office
Room 1301, Block A
No 527 Huai Hai Zhong Rd,
Shanghai 200020
China

Tel: + 86 21 53068245

Fax: + 86 21 53068248

E-mail: deksha@public4.sta.net.cn



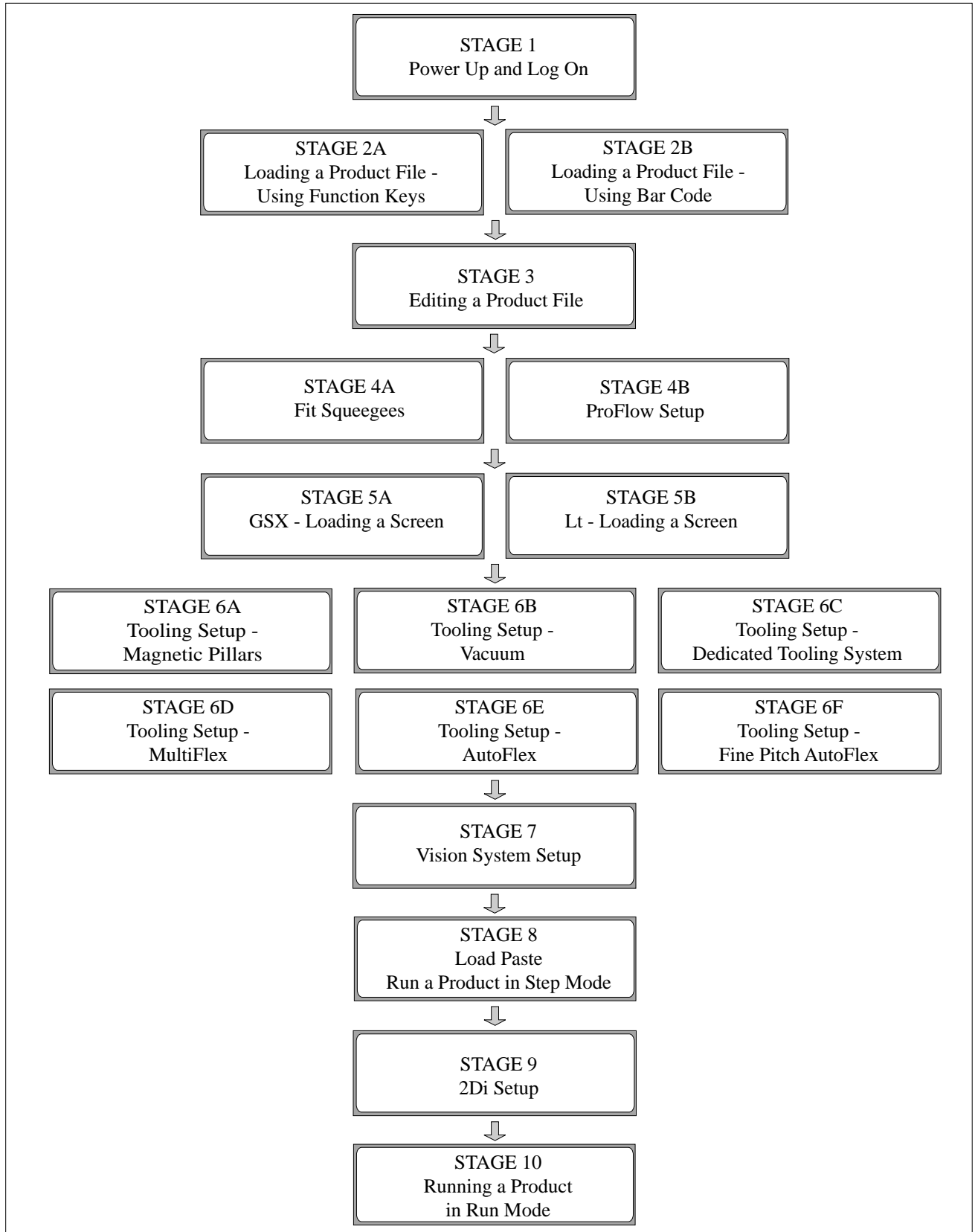
265GSX
265Lt

CHAPTER 1

MACHINE PROGRAMMING

MACHINE PROGRAMMING

INTRODUCTION This chapter details the procedure for a new product setup, in stages and are as follows:



STAGE 1

For machines with the remote board stop option, ensure that the machine is correctly configured for the intended product. Carry out the appropriate one of the following procedures:

- Camera to Remote Board Stop - LHS Configuration
- Camera to Remote Board Stop - RHS Configuration
- Remote Board Stop - LHS to RHS Configuration
- Remote Board Stop - RHS to LHS Configuration
- Remote Board Stop - Same Side Configuration
- Remote Board Stop to Camera Board Stop

See Technical Reference Manual, Rising Table Module Chapter, Replacement Procedures, for the first five procedures and Technical Reference Manual, Camera and Vision System Module Chapter, Replacement Procedures for the Remote Board Stop to Camera Board Stop procedure.

Power Up and Log On

1. Turn the main isolator switch to **On**.



2. When the message **'Press SYSTEM Switch To Initialize Printer or Select Diagnostics or Load Data'** is displayed in the message prompt bar, either:
 - a) Select **Load Data** (F2) if the loaded product is unknown or needs to be changed.
 - b) Go to Step 5 if the loaded product file is known to be the correct one.

	Load Data				Diagnost		
--	------------------	--	--	--	----------	--	--

The Load Data File window is displayed:

Load Data File

10 x 10
 265 Test 1
 Apple
 Calibra
 Default
 Dek 04
 Dek 03
 Test 1
 Xray

Search 265 Test 1	Product ID 265 Test 1
----------------------	--------------------------

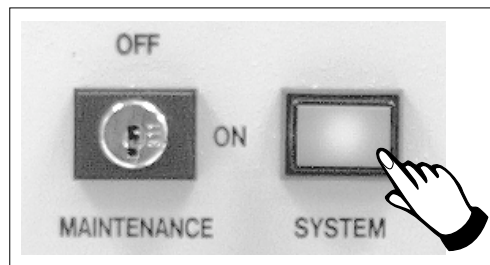
3. Use the **Left**, **Right**, **Up** or **Down** function keys (F4 - F7) to highlight the required file.

Load	Bar Code	Rebuild List	Left	Right	Up	Down	Exit
------	----------	--------------	-------------	--------------	-----------	-------------	------

4. Press **Load** (F1).

Load	Bar Code	Rebuild List	Left	Right	Up	Down	Exit
-------------	----------	--------------	------	-------	----	------	------

5. Initialize the machine by pressing the **System** button.



The selected file is now displayed on the status page.

The operator can change the language used in the display menus.

To select a different language continue with Step 6. If the correct language is loaded go to Step 12.

6. From the status page displayed, select **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

7. Select **Change Language** (F7).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	------------------------	------

8. A list of installed languages is displayed. Select **Up** (F5), or **Down** (F6) until the desired language is highlighted.

9. Select **Load** (F1).

Load					Up	Down	Exit
-------------	--	--	--	--	----	------	------

The message '**Loading Language...**' is displayed. A delay of approximately 20 seconds takes place and all displayed text is changed to the selected language. The message '**Language Loaded...**' is displayed.

10. Select **Exit** (F8).

Load					Up	Down	Exit
------	--	--	--	--	----	------	-------------

11. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

12. Select **Monitor** (F7).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	----------------	--------

13. Select **Log On** (F1).

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
---------------	------------	-------------	-------------	-----------------	---------------	----------------	------

The Operator Log On window is displayed:

Operator Log On
Enter Operator ID:

Using the keyboard, enter the operator's name/ID and press **Enter** on the keyboard, the operator's name appears on the status page.

14. Select **Exit** (F8).

Log Off	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
------------	---------------	----------------	----------------	--------------------	------------------	-------------------	-------------

If this is the correct file for the product proceed to Stage 4. If the file has to be edited proceed to Stage 3.

STAGE 2A

Loading a Product File - Using Function Keys

1. For an existing product, the product file has already been written. If the product is new, either edit an existing or a default file.

The product file displayed after the machine has been initialized is the same one that was resident in the printer when it was powered down.

If this file is correct for the product continue to Stage10 - Running A Product in Run Mode.

If the product file is incorrect for the current product continue with this procedure.

2. Press **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

3. Press **Load Data** (F2).

Mode	Load Data	Edit Data	Setup Squeegce	Change Screen	Change Tooling	Change Language	Exit
------	------------------	-----------	----------------	---------------	----------------	-----------------	------

The Load Data File window is displayed:

Load Data File

10 x 10

265 Test 1

Apple

Calibra

Default

Dek 04

Dek 03

Test 1

Xray

Search

265 Test 1

Product ID

265 Test 1

4. Use the **Left**, **Right**, **Up** or **Down** function keys (F4 -F7) to highlight the required file.

Load	Bar Code	Rebuild List	Left	Right	Up	Down	Exit
------	----------	--------------	-------------	--------------	-----------	-------------	------

5. Press **Load** (F1).

Load	Bar Code	Rebuild List	Left	Right	Up	Down	Exit
-------------	-------------	-----------------	------	-------	----	------	------

The selected file is now displayed on the monitor.

If this is the correct file for the product proceed to Stage 4. If the file has to be edited proceed with Stage 3.

STAGE 2B

Loading a Product File - Using Bar Code

A product with a barcode can be loaded by using either the product light pen or by using the keyboard. From the status page:

1. Select **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

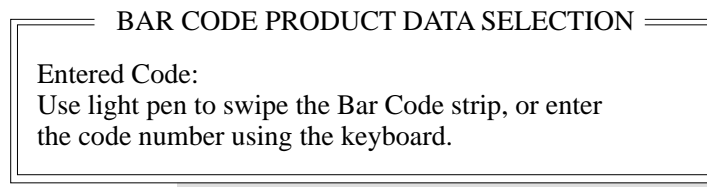
2. Select **Load Data** (F2).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	------------------	-----------	----------------	---------------	----------------	-----------------	------

3. Select **Bar Code** (F2).

Load	Bar Code	Rebuild List	Left	Right	Up	Down	Exit
------	-----------------	--------------	------	-------	----	------	------

The Bar Code Product Data Selection window is displayed:



4. Swipe the barcode at a steady speed, left to right, or right to left, or enter the code using the keyboard.

5. Select **Exit** (F8).

Load	Bar Code		Left	Right	Up	Down	Exit
------	----------	--	------	-------	----	------	-------------

6. Go to Stage 4.

STAGE 3

Editing a Product File

1. Select **Edit Data** (F3).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

The Edit Current Process Parameters window is displayed:

Edit Current Process Parameters		
PRODUCT NAME	Dek04	
PRODUCT ID	Dek04	
DWELL HEIGHT	30	mm
DWELL SPEED	24	mm/s
SCREEN ADAPTOR	NONE	
SCREEN IMAGE	EDGE	
CUSTOM SCREEN	DISABLED	
BOARD WIDTH	101.5	mm
BOARD LENGTH	152.5	mm
BOARD THICKNESS	1.6	mm
PRINT SPEED	150	mm/s
FLOOD SPEED	20	mm/s
PRINT FRONT LIMIT	0.0	mm
PRINT REAR LIMIT	0.0	mm
.. more		

2. Select **Incr.** (F6). Type in required product name and press **Enter** using the keyboard.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	-------	------

3. Highlight Product ID using the **Next** key (F4). Select **Incr.** (F6). Type in the required product ID and press **Enter** using the keyboard.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	----------	--------------	-------	------

4. Use the **Next** and **Previous** keys (F4 - F5) to highlight the required parameter.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	-------	-------	------

5. Use either the **Incr.** and **Decr.** keys (F6 - F7) or the forward slash key (/) on the keyboard to change the parameter value.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

NOTE

A definition of all editable parameters is contained at the end of this chapter.

6. Select **Save** (F2). The message '**Saving fiducial data - Please wait Board data file saved**' is displayed.

	Save		Next	Previous	Incr.	Decr.	Exit
--	-------------	--	------	----------	-------	-------	------

7. Repeat Steps 4 - 6 for the remaining parameters.

8. Select **Exit** (F8).

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	-------------

STAGE 4A

Fit Squeegees

Fitting Squeegees

If ProFlow was used when running the last product, carry out the ProFlow to Squeegee Replacement Procedure, see Technical Reference Manual, Squeegee Module Chapter - Replacement Procedures.

1. Select **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

2. Select **Setup Squeegee** (F4).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	-----------------------	---------------	----------------	-----------------	------

3. Select **Change Squeegee** (F1).

Change Squeegee	Calibrat Heights						Exit
------------------------	------------------	--	--	--	--	--	------

4. Lift the front printhead cover.

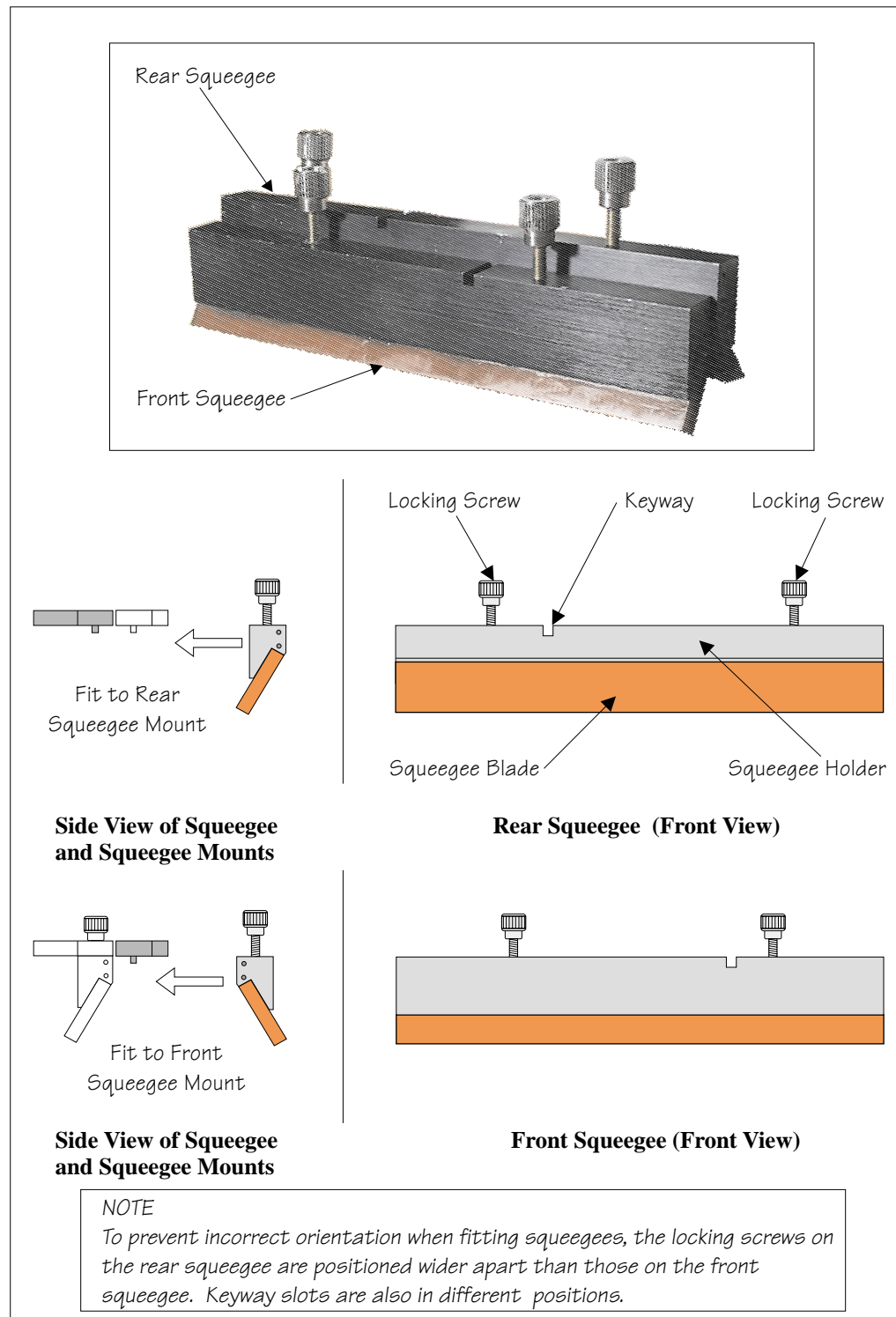


5. Before fitting the squeegees to the machine, fix the paste deflectors to each end of the squeegee assemblies, using the screws supplied. Ensure that the bottom edge of the deflector is above the lower edge of the squeegee blade. The setting of the paste deflectors is carried out later in this chapter.

NOTE

The deflectors are handed so care must be taken to fix the correct deflector to each end of the squeegee assemblies.

The front and rear squeegees must be fitted in the correct positions. Each squeegee has a keyway machined into it to ensure that it cannot be incorrectly fitted.



6. Fit the rear squeegee onto the rear squeegee mount, tightening the thumbscrews until they are finger tight.

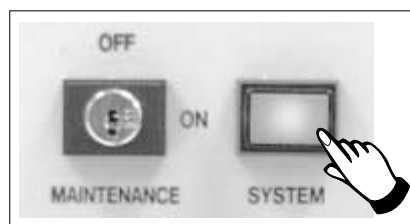
7. Fit the front squeegee onto the front squeegee mount, ensuring that the thumbscrews are only finger tight.



8. Lower the front printhead cover.



9. Press the **System** button.



10. Select **Continue** (F1).

Continue							
-----------------	--	--	--	--	--	--	--

11. Select **Calibrat Heights** (F2). The message ‘**Ensure that the correct squeegees are fitted**’ is displayed.

Change Squeegee	Calibrat Heights						Exit
-----------------	-------------------------	--	--	--	--	--	------

12. Select **Continue** (F1). The message ‘**Calibrating pressure heights - DO NOT Open Covers !**’ is displayed.

Continue	Restore Defaults						Exit
-----------------	------------------	--	--	--	--	--	------

13. Select **Exit** (F8).

Change Squeegee	Calibrat Heights						Exit
-----------------	------------------	--	--	--	--	--	-------------

14. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

STAGE 4B**ProFlow Setup**

If squeegees were used when running the last product, carry out the Squeegees to ProFlow Replacement Procedure, see Technical Reference Manual, ProFlow Module Chapter - Replacement Procedures.

For setting the contact and downstop positions, carry out the ProFlow Contact Position Setup, see Technical Reference Manual, ProFlow Module Chapter - Adjustments and Settings.

STAGE 5A

GSX - Loading a Screen

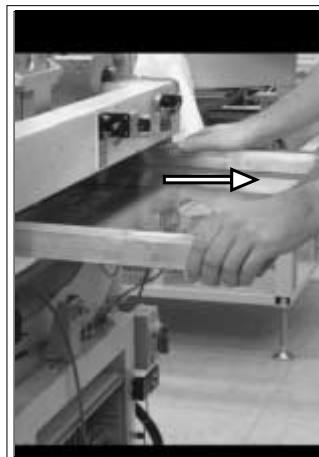
1. Select **Change Screen** (F5).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	----------------------	----------------	-----------------	------

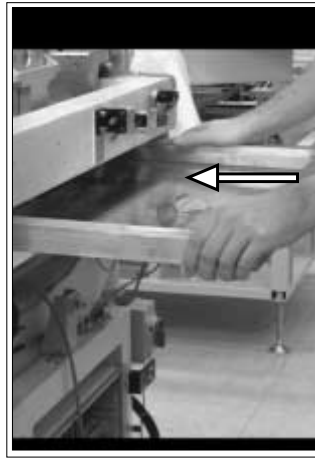
2. Lift the front printhead cover.



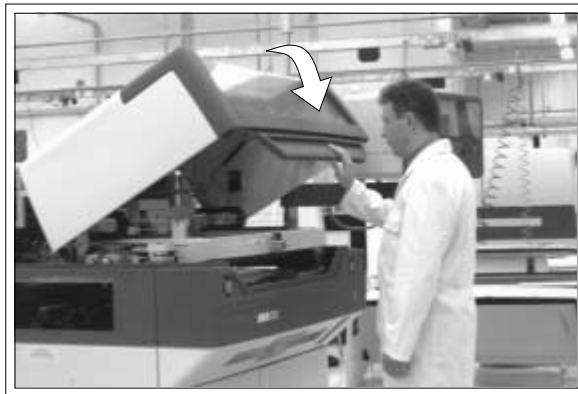
3. If a screen is already present in the printer this should be removed.



- Fit the new screen into the printer ensuring the correct orientation of the screen.



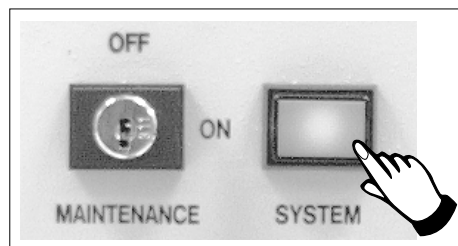
- Lower the front printhead cover.



- Select **Change Screen** (F5).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	----------------------	----------------	-----------------	------

- Press the **System** button.



- Continue to Stage 6 - Tooling Setup.

STAGE 5B

**Lt - Loading a
Screen**

If a screen is already present in the printer this should be removed.

1. Press **Change Screen** (F5).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	----------------------	----------------	-----------------	------

2. When prompted to do so lift the printhead cover.



3. Slowly pull out the manual screen removal mechanism (black knob), bringing the screen to the front of the machine. Do not pull too hard as this may momentarily dislodge the chase.



CAUTION

SCREEN EXTRACTOR ROD. When the screen removal mechanism is being used and the extraction rod is extended (knob has been pulled forward), care should be taken not to bend the extraction rod by pushing it sideways or closing the front cover. Distortion of the extraction rod impairs the functioning of the screen removal mechanism.

ADJUSTABLE SCREEN SPACER. If an adjustable screen spacer has been placed in the machine behind the screen, care should be taken when removing the screen to avoid the spacer falling from the chase and causing injury to the operator or damage to the machine.

4. If an Adjustable Screen Spacer is in the machine proceed to Step 5. Remove the screen from the printer proceed to Step 9.



5. Pull the screen slowly forward until the rear edge of the screen, but NOT the adjustable screen spacer, has just cleared the chase rails.
6. Lower the rear of the screen slightly so that it disengages from the adjustable screen spacer.
7. Remove the screen from the machine.
8. Slowly remove the adjustable screen spacer from the machine.

9. If an Adjustable Screen Spacer is to be used proceed to Step 10.
Fit the new screen into the printhead ensuring the correct orientation of the screen. For edge justified screen images push the screen fully to the rear. For centre justified screen images correctly position the screen using the graduated scale. Proceed to Step 14.



NOTE

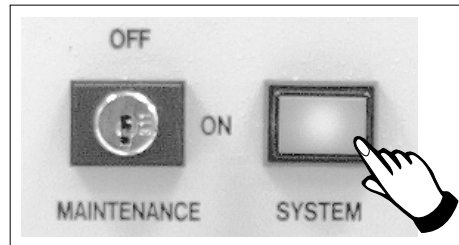
For the adjustable Screen Spacer setup, see Technical Reference Manual, Screens and Screen Images Chapter.

10. Slide the adjustable screen spacer partly into the chase, with the jack screws facing towards the rear of the machine.
11. Slide the screen into the chase until it engages with the screen catch plates of the adjustable screen spacer.
12. Slide the screen and spacer towards the rear of the chase until the spacer makes contact with the chase stops.
13. Press gently against the front of the screen, to ensure that there is no gap between the screen and spacer or the spacer and chase stops.
14. Lower the printhead cover.



15. Press the **System** button on the control console.

For edge justified screen images the screen is automatically clamped in place, providing the screen has been pushed fully in against the stops.



16. For centre justified screen images only, press **Confirm**, the screen is automatically clamped in place.

17. Continue to Stage 6 - Tooling Setup.

CAUTION

SCREEN NOT LOADED. Pressing **Confirm** without a screen loaded, could result in serious machine damage.

STAGE 6A

Tooling Setup - Magnetic Pillars



WARNING
BOARD CLAMPS. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN THE TOOLING AREA OF THE MACHINE TO AVOID INJURY. THE FOILS ON THE FRONT AND REAR BOARD CLAMPS ARE VERY SHARP.

CAUTION
BOARD CLAMPS. Care must be taken to ensure that the board clamps are not damaged when removing or replacing tooling.

Board Stop

Setting up the board stop position is automatically done using the board dimensions previously set in the board parameter file. If adjustment is necessary proceed as follows:

1. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

The Change Tooling Parameters window is displayed:

Change Tooling Parameters		
BOARD WIDTH	216.0	mm
BOARD STOP X	125.0	mm
BOARD STOP Y	142.6	mm

NOTE

If the remote board stop is fitted the Board Stop X and Board Stop Y parameters are replaced by Remote Board Stop X.

These parameters are automatically calculated from the board size parameters that were entered in the product file. If they need adjustment to re-position the board stop for any reason, ie any routing on the board edge or a badly positioned image on the screen, this can be done now.

2. Select **Adjust** (F1).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
---------------	------------	----------------	------------	------------	------------	--------------	------

3. Use the **Next** and **Previous** keys (F4 - F5) to highlight each parameter.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	-------	-------	------

- Use the **Incr.** and **Decr.** keys (F6 - F7), or the forward slash key (/) on the keyboard, to change the parameter value.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

- Select **Save** (F2). The message ‘**Saving fiducial data - Please wait Board data file saved**’ is displayed.

	Save		Next	Previous	Incr.	Decr.	Exit
--	-------------	--	------	----------	-------	-------	------

- Select **Exit** (F8).

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	-------------

Magnetic Pillars

- Select **Board Stop** (F4).

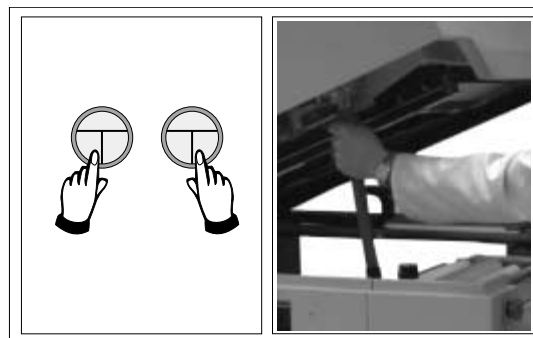
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	-------------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

- Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

- Raise the printhead using two button control. Fit the head prop.



4. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

5. Slide a board along the rails to abut the board stop.



6. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

7. Using the board as a reference, position the outermost support pins on the rising table under the board.



8. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

9. Remove the board and select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

10. Complete the positioning of the support pins.



11. Select **Board Clamps** (F3), to open the clamps.

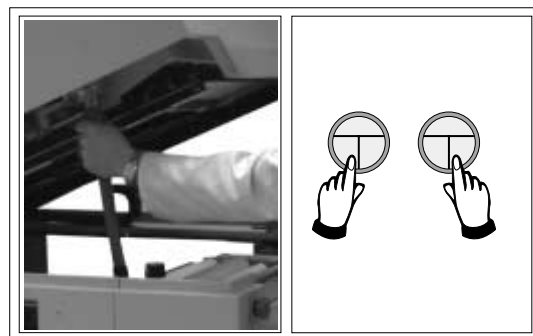
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

12. Slide the board back along the rails to abut the board stop.

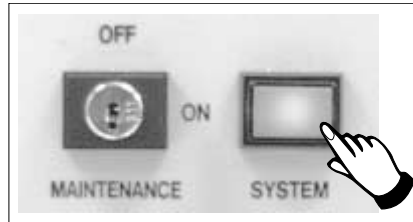
13. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

14. Remove the head prop. Lower the printhead using two button control.



15. Press the **System** button.



16. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

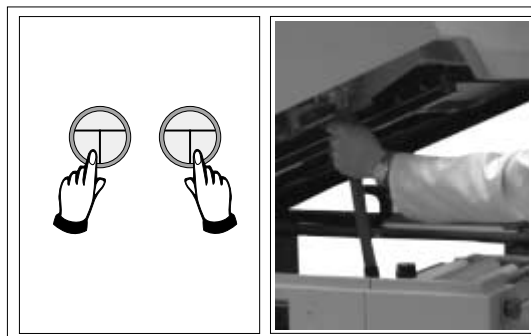
17. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

18. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

19. Raise the printhead using two button control. Fit the head prop.



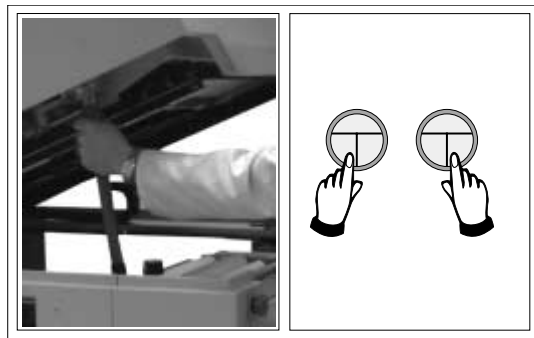
20. Check that the setup of the tooling is adequate for the board, adjust as necessary.



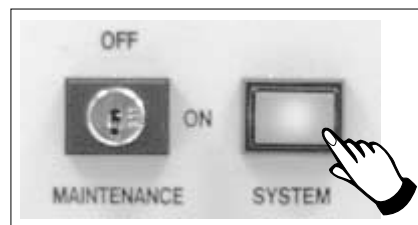
21. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

22. Remove the head prop. Lower the printhead using two button control.



23. Press the **System** button.



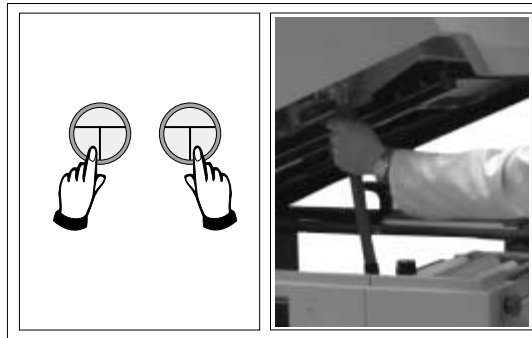
24. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

25. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

26. Raise the printhead using two button control. Fit the head prop.



27. Select **Board Clamps** (F3), to open the clamps.

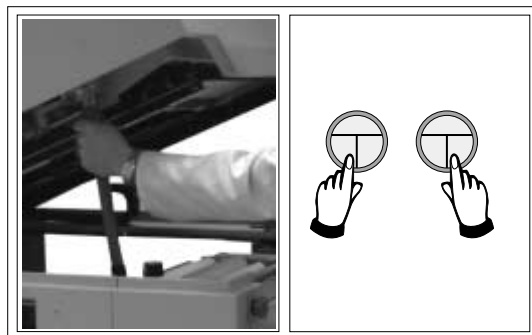
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

28. Remove the board from the rails.

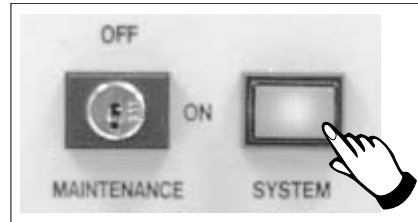
29. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

30. Remove the head prop. Lower the printhead using two button control.



31. Press the **System** button.



32. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	---------------	-------------------	---------------	---------------	---------------	-----------------	-------------

33. Go to Stage 7.

STAGE 6B

Tooling Setup - Vacuum



WARNING

BOARD CLAMPS. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN THE TOOLING AREA OF THE MACHINE TO AVOID INJURY. THE FOILS ON THE FRONT AND REAR BOARD CLAMPS ARE VERY SHARP.

CAUTION

BOARD CLAMPS. Care must be taken to ensure that the board clamps are not damaged when removing or replacing tooling.

1. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

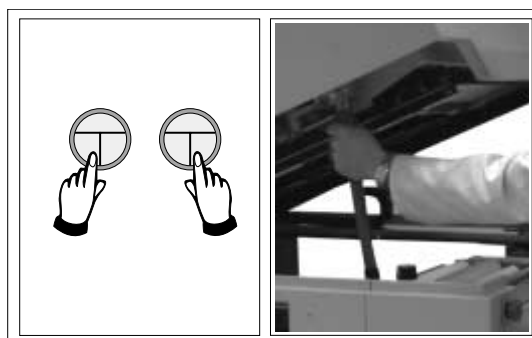
2. Select **Full Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	-------------------	------------	--------------	------

3. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	-------------------	----------------	------------	-------------	------------	--------------	------

4. Raise the printhead using two button control. Fit the head prop.



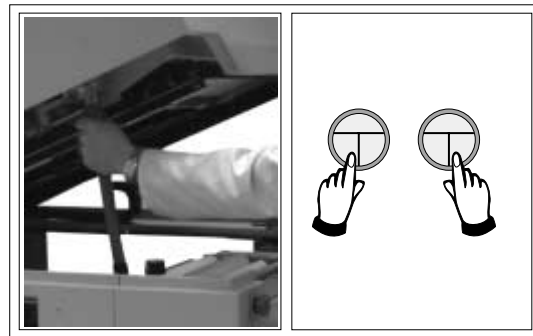
- The vacuum box can now be fitted into the appropriate location holes in the tooling plate. Ensure that the vacuum box is placed into the correct set of holes, taking regard of the type of screen being used and hence the position of the fixed rail.



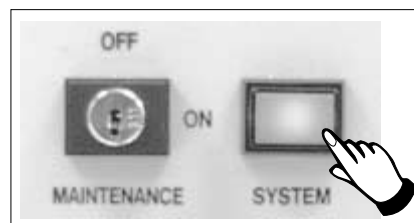
- Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

- Remove the head prop. Lower the printhead using two button control.



- Press the **System** button.



9. Select **Board Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	--------------------	------------	--------------	------

10. Select **Board Stop** (F4).

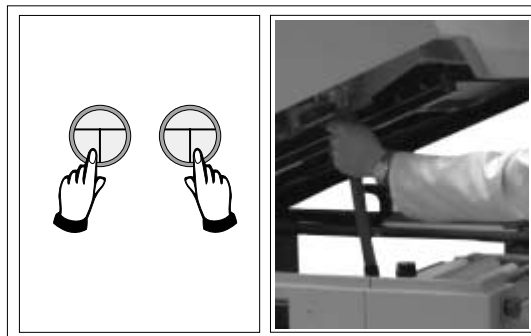
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

11. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

12. Raise the printhead using two button control. Fit the head prop.



13. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

14. Slide a board along the rails to abut the board stop.

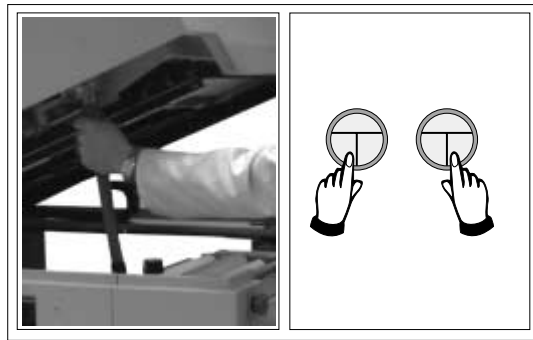
15. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

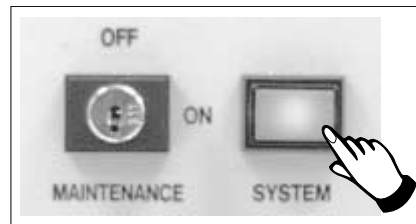
16. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

17. Remove the head prop. Lower the printhead using two button control.



18. Press the **System** button.



19. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

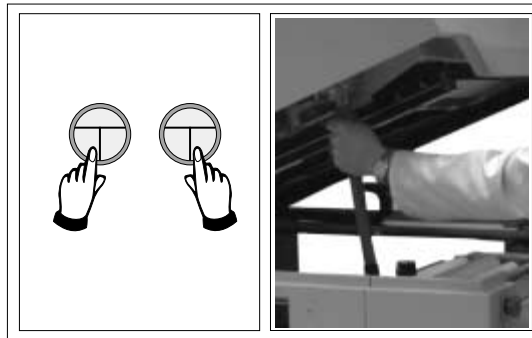
20. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

21. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

22. Raise the printhead using two button control. Fit the head prop.

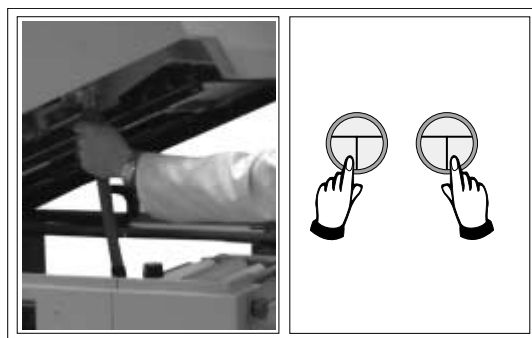


23. Check that the setup of the tooling is adequate for the board, adjust as necessary.

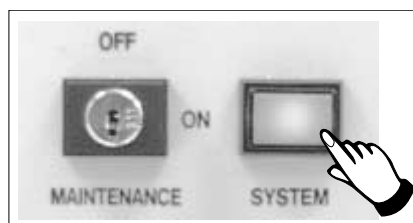
24. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

25. Remove the head prop. Lower the printhead using two button control.



26. Press the **System** button.



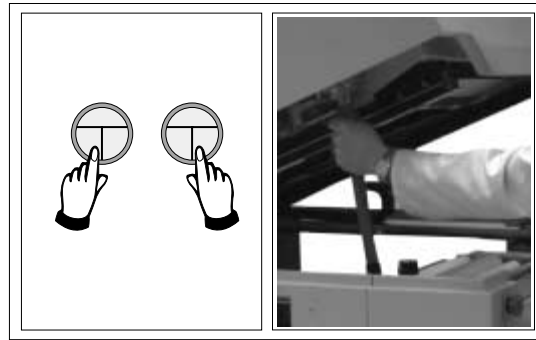
27. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

28. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

29. Raise the printhead using two button control. Fit the head prop.



30. Select **Board Clamps** (F3), to open the clamps.

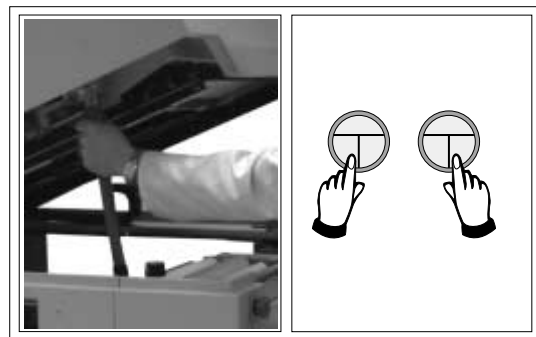
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

31. Remove the board from the rails.

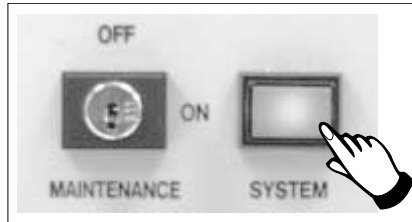
32. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

33. Remove the head prop. Lower the printhead using two button control.



34. Press the **System** button.



35. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	---------------	-------------------	---------------	---------------	---------------	-----------------	-------------

36. Go to Stage 7.

STAGE 6C

Tooling Setup - Dedicated Tooling System



WARNING

BOARD CLAMPS. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN THE TOOLING AREA OF THE MACHINE TO AVOID INJURY. THE FOILS ON THE FRONT AND REAR BOARD CLAMPS ARE VERY SHARP.

CAUTION

BOARD CLAMPS. Care must be taken to ensure that the board clamps are not damaged when removing or replacing tooling.

1. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

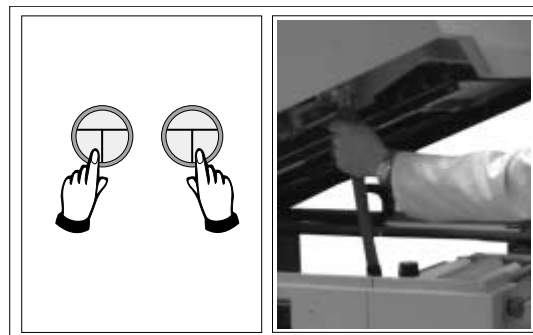
2. Select **Full Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	-------------------	------------	--------------	------

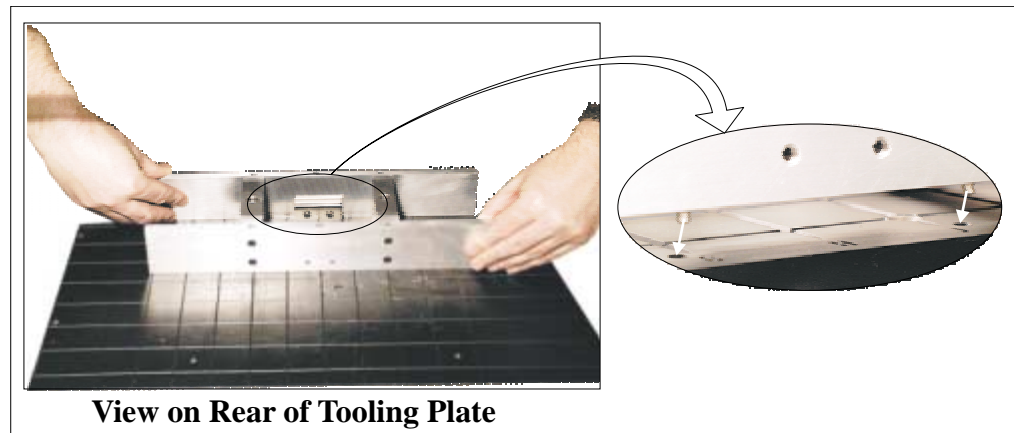
3. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	-------------------	----------------	------------	-------------	------------	--------------	------

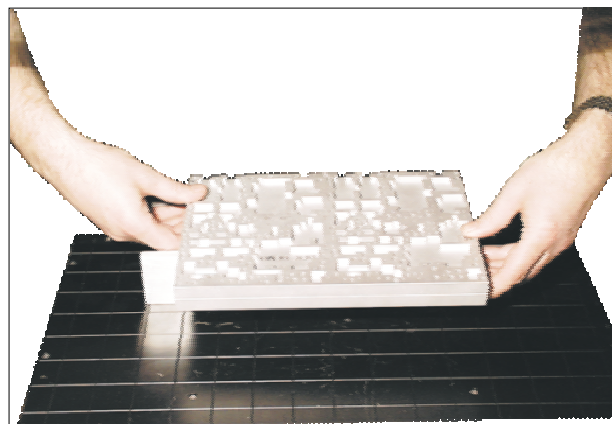
4. Raise the printhead using two button control. Fit the head prop.



5. Fit the tooling tower to the manual tooling plate. Ensure the dowels on the front edge of the tooling tower base are correctly seated in the holes in the front edge of the manual tooling plate.



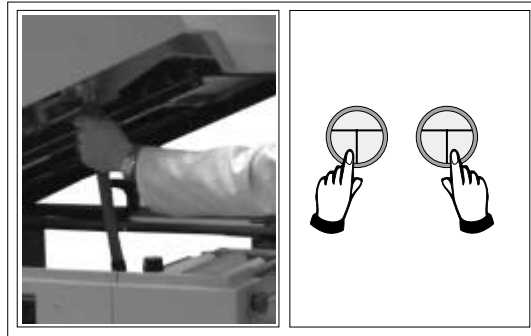
6. Verify the plate assembly orientation and fit the assembly to the tooling tower. Ensure the dowels of the plate assembly are correctly seated in the holes in the tooling tower.



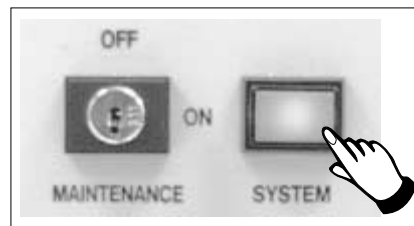
7. If required, slide the additional magnetic pins beneath the plate assembly to fully support it when printing wide boards.



8. Remove the head prop. Lower the printhead using two button control.



9. Press the **System** button.



10. Select **Board Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	--------------------	------------	--------------	------

11. Select **Board Stop** (F4).

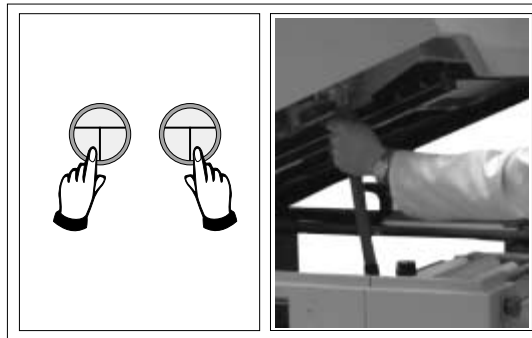
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

12. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

13. Raise the printhead using two button control. Fit the head prop.



14. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

15. Slide a board along the rails to abut the board stop.

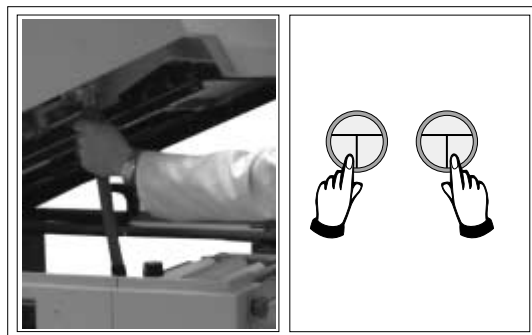
16. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

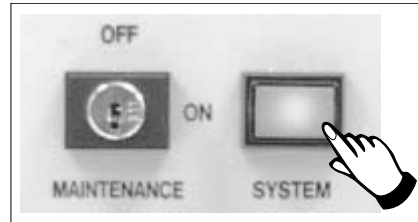
17. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

18. Remove the head prop. Lower the printhead using two button control.



19. Press the **System** button.



20. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

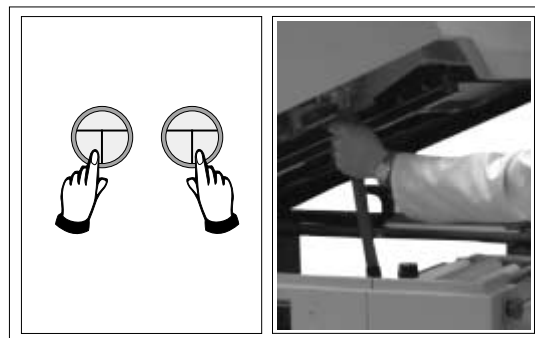
21. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

22. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

23. Raise the printhead using two button control. Fit the head prop.

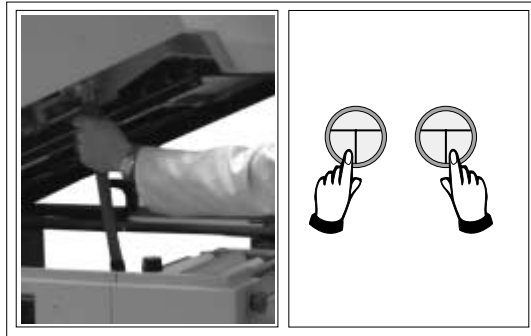


24. Check that the setup of the tooling is adequate for the board, adjust as necessary.

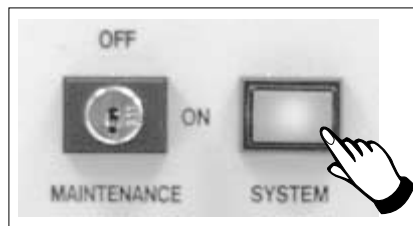
25. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

26. Remove the head prop. Lower the printhead using two button control.



27. Press the **System** button.



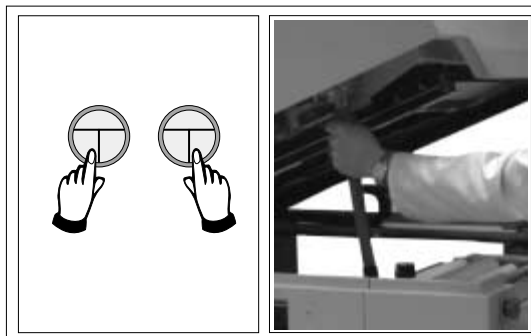
28. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

29. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

30. Raise the printhead using two button control. Fit the head prop.



31. Select **Board Clamps** (F3), to open the clamps.

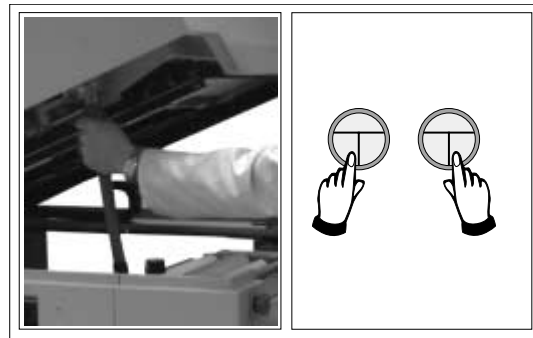
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

32. Remove the board from the rails.

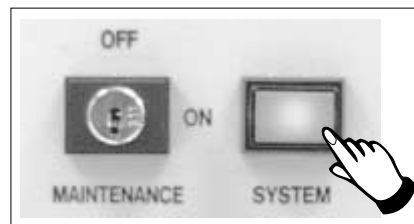
33. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

34. Remove the head prop. Lower the printhead using two button control.



35. Press the **System** button.



36. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	-------------

37. Go to Stage 7.

STAGE 6D

Tooling Setup - MultiFlex



WARNING

BOARD CLAMPS. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN THE TOOLING AREA OF THE MACHINE TO AVOID INJURY. THE FOILS ON THE FRONT AND REAR BOARD CLAMPS ARE VERY SHARP.

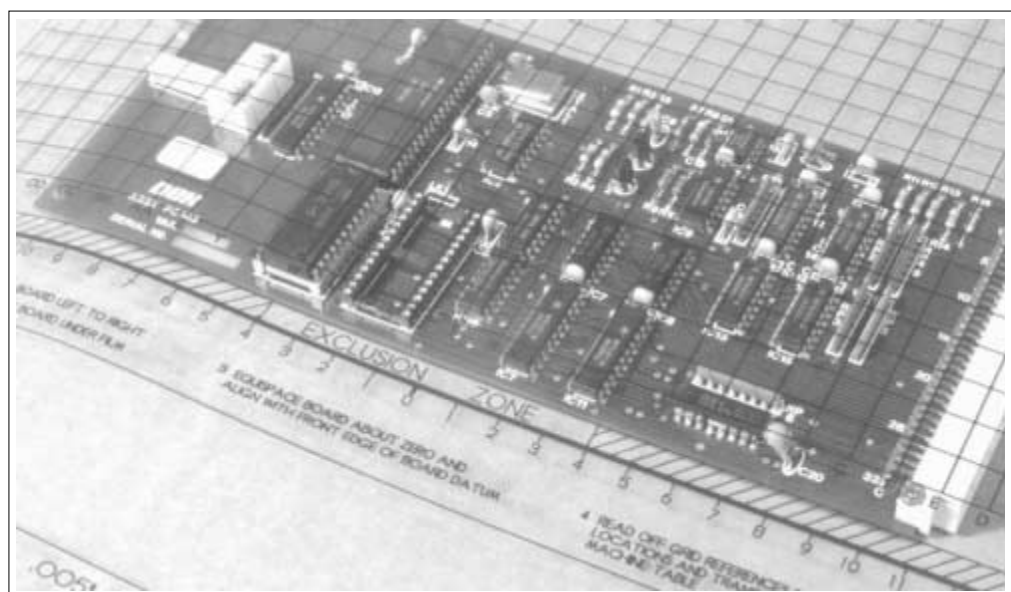
CAUTION

BOARD CLAMPS. Care must be taken to ensure that the board clamps are not damaged when removing or replacing tooling.

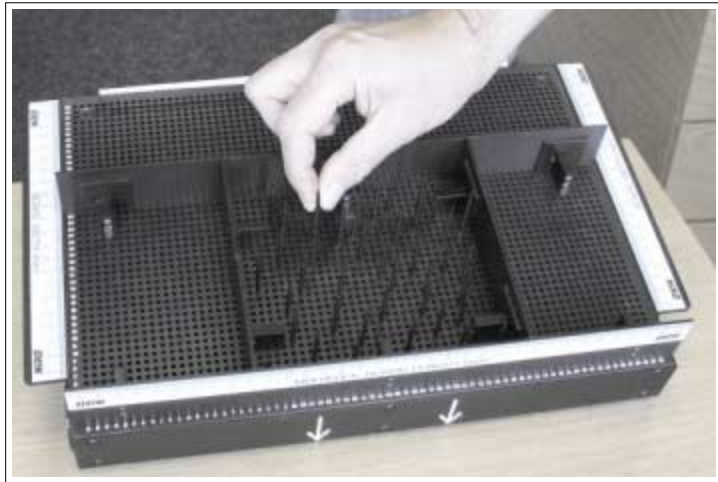
NOTE

Setting up the MultiFlex tooling is to be performed off the machine.

1. Create a box the same size as the board using the side plates.
2. Use the board width and board length dimensions to position the box correctly.
3. Place the PCB on a flat surface, with the components that are under the board during printing uppermost.
4. Position the acetate template, supplied with the tooling, over the PCB such that the front edge of the board is aligned with the arrow indicators on the template. Ensure also that the centreline of the board is aligned with the template zero.



5. Using the grid co-ordinates marked on the template, position pins which coincide with gaps between the underside board components.



6. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

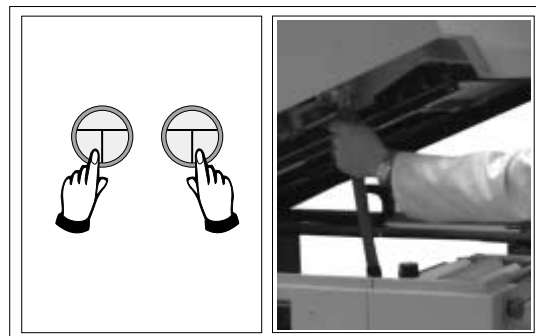
7. Select **Full Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	-------------------	------------	--------------	------

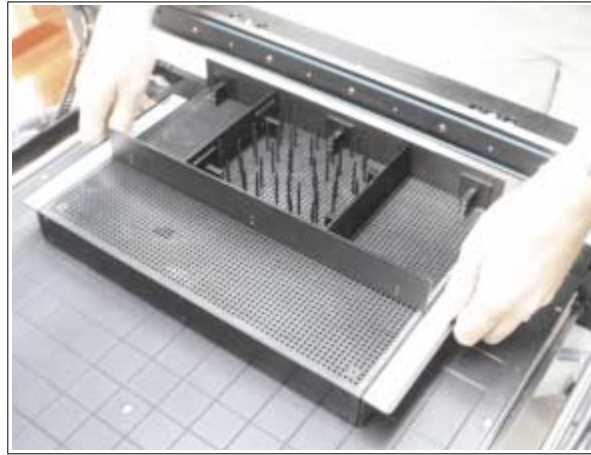
8. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	-------------------	----------------	------------	-------------	------------	--------------	------

9. Raise the printhead using two button control. Fit the head prop.



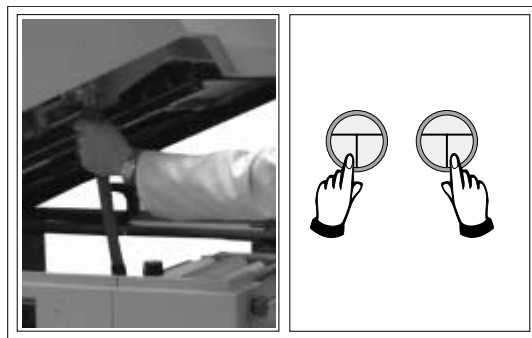
10. The MultiFlex tooling can now be fitted into the appropriate location holes in the tooling plate. Ensure that the tooling is placed into the correct set of holes, taking regard of the type of screen being used and hence the position of the fixed rail.



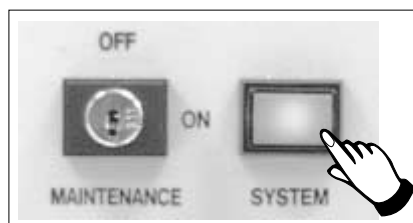
11. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

12. Remove the head prop. Lower the printhead using two button control.



13. Press the **System** button.



14. Select **Board Width** (F5).

Adjust	Raise Head	Remove Cleaner	Board Stop	Board Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	--------------------	------------	--------------	------

15. Select **Board Stop** (F4).

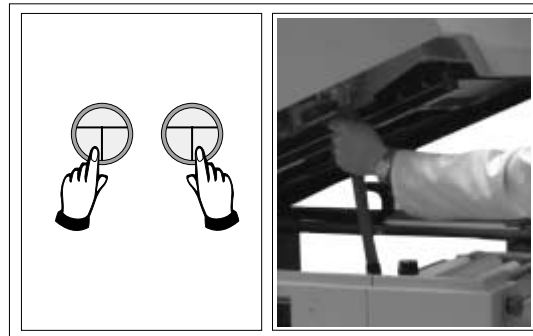
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

16. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

17. Raise the printhead using two button control. Fit the head prop.



18. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

19. Slide a board along the rails to abut the board stop.

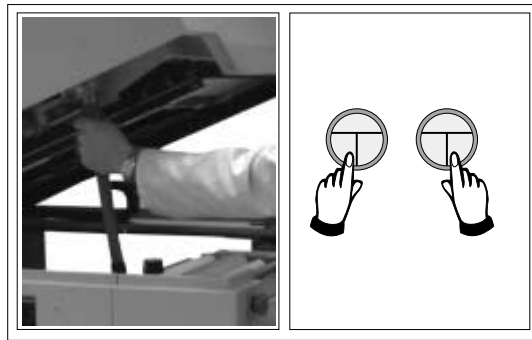
20. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

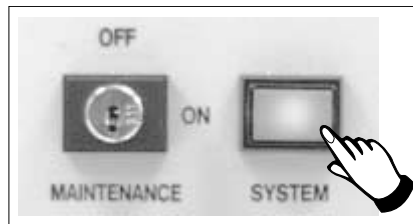
21. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

22. Remove the head prop. Lower the printhead using two button control.



23. Press the **System** button.



24. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

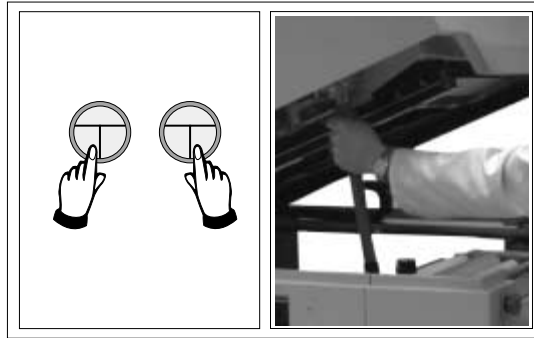
25. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

26. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

27. Raise the printhead using two button control. Fit the head prop.

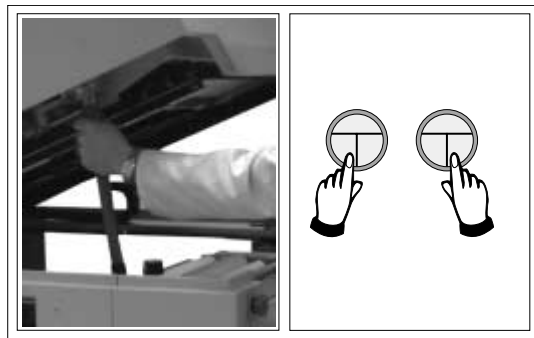


28. Check that the setup of the tooling is adequate for the board, adjust as necessary.

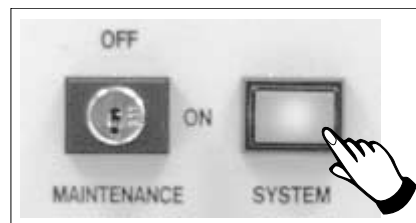
29. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

30. Remove the head prop. Lower the printhead using two button control.



31. Press the **System** button.



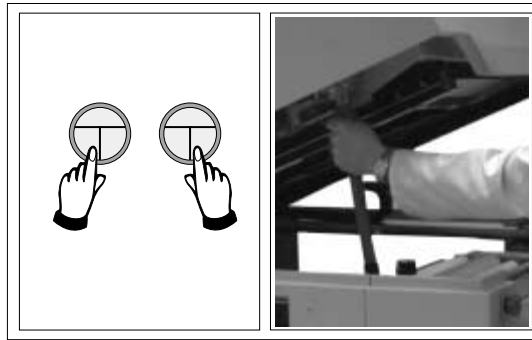
32. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

33. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

34. Raise the printhead using two button control. Fit the head prop.



35. Select **Board Clamps** (F3), to open the clamps.

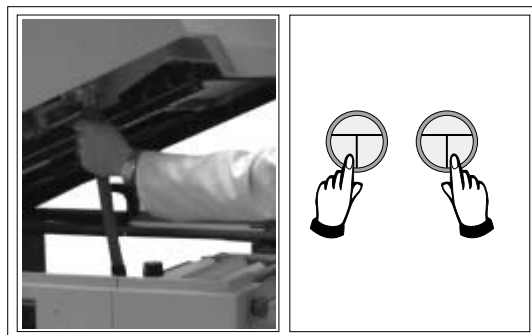
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

36. Remove the board from the rails.

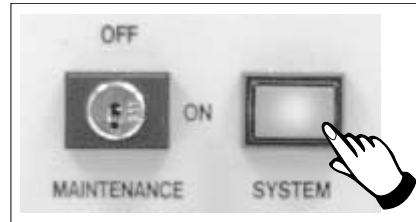
37. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

38. Remove the head prop. Lower the printhead using two button control.



39. Press the **System** button.



40. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	---------------	-------------------	---------------	---------------	---------------	-----------------	-------------

41. Go to Stage 7.

STAGE 6E

Tooling Setup - AutoFlex

The correct pins for each product are selected automatically when the board size parameters are programmed into the board file. If the pin configuration needs to be changed, for example if a support pin coincides with the position of an underside component and needs to be removed, from the setup page:

1. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

The Change Tooling Parameters window is displayed:

Change Tooling Parameters		
BOARD WIDTH	216.0	mm
BOARD STOP X	125.0	mm
BOARD STOP Y	142.6	mm

The parameters are not active.

2. Select **Adjust** (F1). The parameters are now active.

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
---------------	------------	----------------	------------	------------	------------	--------------	------

3. Select **Change Autoflex** (F1).

Change Autoflex	Save		Next	Previous	Incr.	Decr.	Exit
------------------------	------	--	------	----------	-------	-------	------

8. Select **Exit** (F8).

Change Autoflex	Save		Next	Previous	Incr.	Decr.	Exit
-----------------	------	--	------	----------	-------	-------	-------------

9. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	-------------

10. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

The rail moves to the board width and the selected Autoflex pins rise.

11. Select **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

12. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

13. Select **Board Stop** (F4).

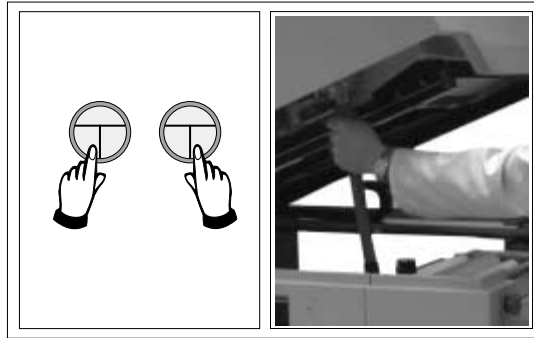
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	-------------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

14. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

15. Raise the printhead using two button control. Fit the head prop.



16. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

17. Slide a board along the rails to abut the board stop.

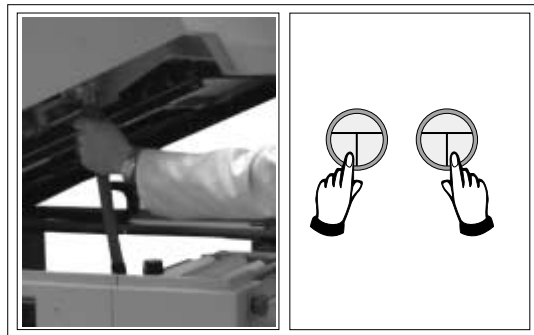
18. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

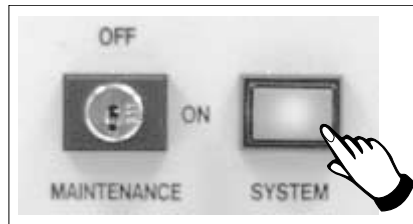
19. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

20. Remove the head prop. Lower the printhead using two button control.



21. Press the **System** button.



22. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

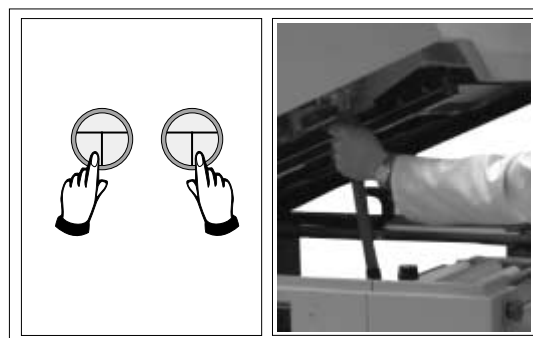
23. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

24. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

25. Raise the printhead using two button control. Fit the head prop.

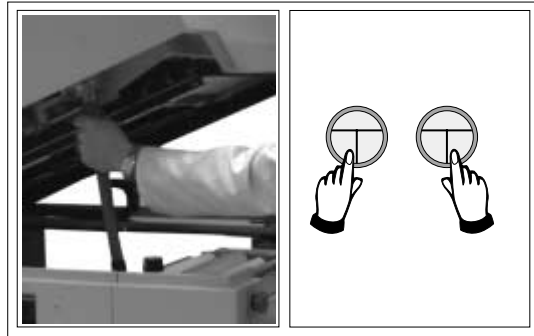


26. Check that the setup of the tooling is adequate for the board, adjust as necessary.

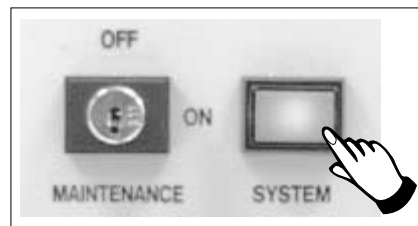
27. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

28. Remove the head prop. Lower the printhead using two button control.



29. Press the **System** button.



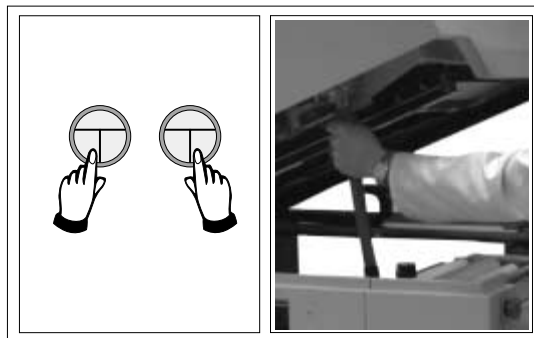
30. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

31. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

32. Raise the printhead using two button control. Fit the head prop.



33. Select **Board Clamps** (F3), to open the clamps.

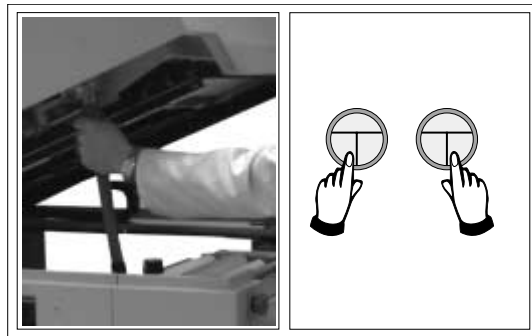
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

34. Remove the board from the rails.

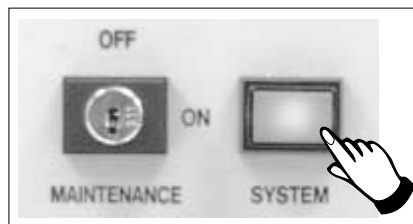
35. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

36. Remove the head prop. Lower the printhead using two button control.



37. Press the **System** button.



38. Select **Exit** (F8).

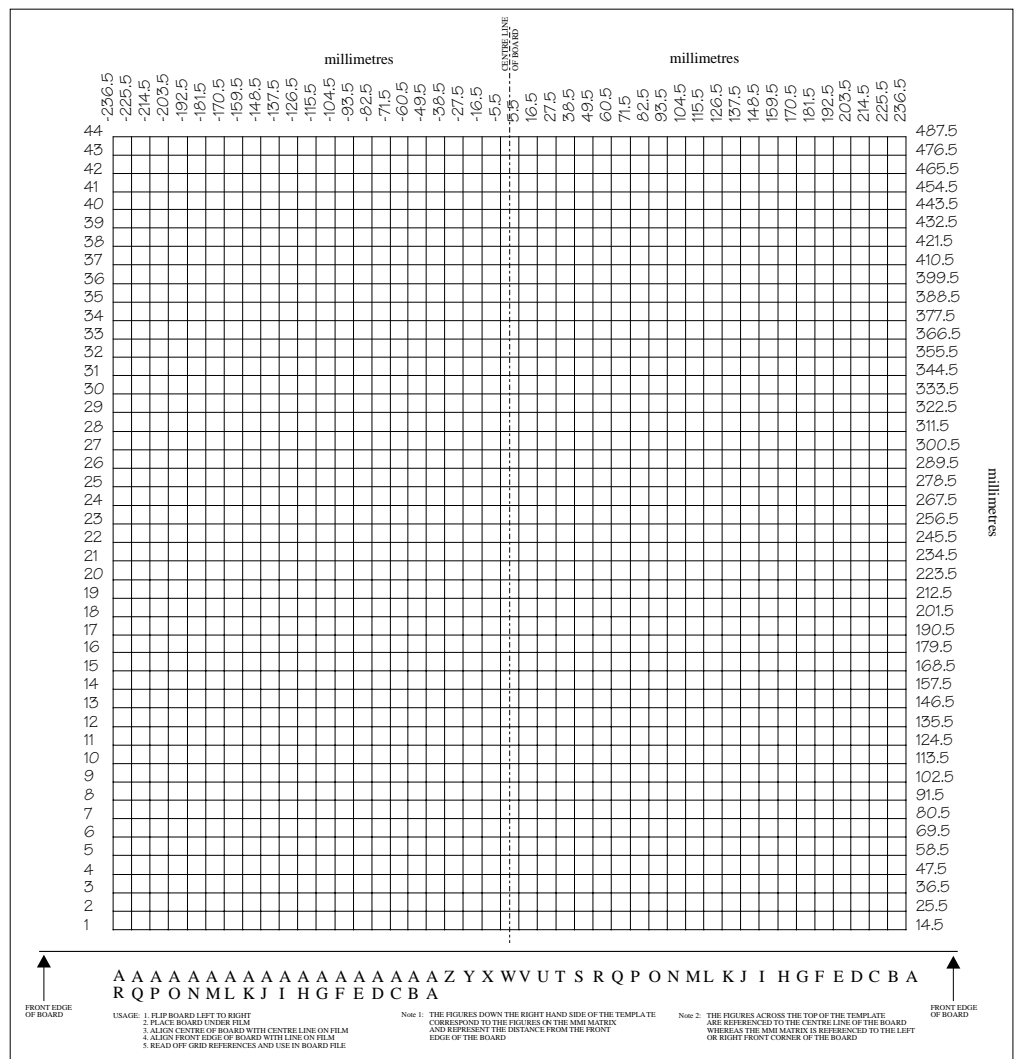
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	-------------

39. Go to Stage 7.

STAGE 6F

Tooling Setup - Fine Pitch AutoFlex

1. Place the PCB on a flat surface, component side up.
2. Position the acetate template, supplied with the tooling, over the PCB. Align the centre of the PCB with the centreline of the template. Align the front edge of the PCB with the line on the template.
3. Using the grid co-ordinates marked on the template, select which pins need to be raised and which pins need to be lowered.



4. Select **Change Tooling** (F6).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	-----------------------	-----------------	------

The Change Tooling Parameters window is displayed:

Change Tooling Parameters		
BOARD WIDTH	216.0	mm
BOARD STOP X	125.0	mm
BOARD STOP Y	142.6	mm

The parameters are not active.

5. Select **Adjust** (F1). The parameters are now active.

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
---------------	------------	----------------	------------	------------	------------	--------------	------

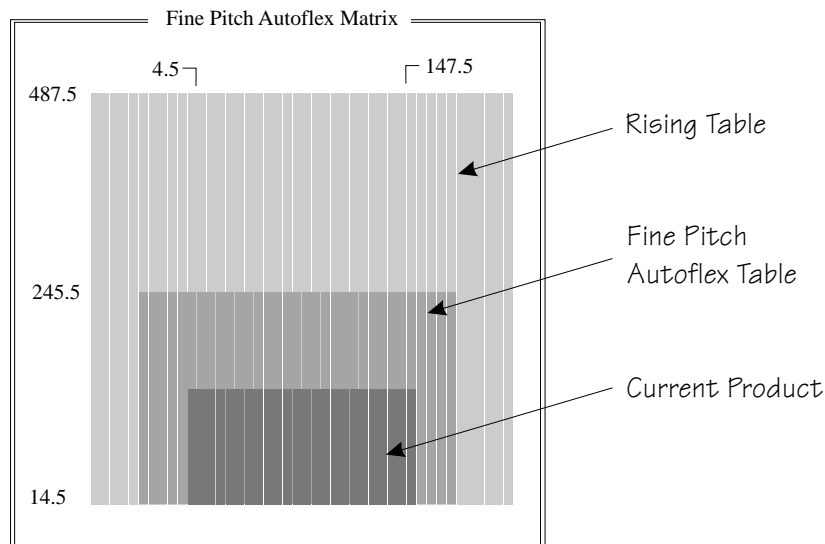
6. Select **Change Autoflex** (F1). The message **Use the '/' key to enter Numeric Block Control** is displayed.

NOTE

This is only available if both Product File and Set Preferences have AutoFlex selected.

Change Autoflex	Save		Next	Previous	Incr.	Decr.	Exit
------------------------	------	--	------	----------	-------	-------	------

The Fine Pitch Autoflex Matrix window is displayed, showing the extent of the rising table, the fine pitch Autoflex table and the current product:



There are three ways of changing the pin configuration, as follows:

- Changing an area to either pins up or pins down
- Toggling state of individual pins
- Toggling state of pins in an area

Changing an Area to Either Pins Up or Pins Down

7. Press the forward slash key (/) on the keyboard.

The Fine Pitch Block Control window is displayed:

Fine Pitch Block Control	
Block Origin X	0.0 mm
Block Origin Y	0.0 mm
Block Final X	152.0 mm
Block Final Y	101.0 mm

NOTE

If Grid is selected under Autoflex Entry in Set Prefs, the parameter values are column letters and row numbers not in mm as shown.

8. Use the **Next** and **Previous** keys (F4 - F5), to highlight each parameter in turn.

Lower Block	Raise Block	Cancel	Next	Previous	Incr.	Decr.	Exit
-------------	-------------	--------	-------------	-----------------	-------	-------	------

9. Either:

a. Use the **Incr.** and **Decr.** keys (F6 - F7), to set each of the values.

Lower Block	Raise Block	Cancel	Next	Previous	Incr.	Decr.	Exit
-------------	-------------	--------	------	----------	--------------	--------------	------

Or:

b. (i). Press the forward slash key (/) on the keyboard. A window is displayed for the selected parameter:

Block Origin X	
Minimum Value	0.0000 mm
Maximum Value	152.0000 mm
Increment	0.5000 mm
Current Value	0.0000 mm
Enter New Value	= mm

(ii). Using the numeric keypad enter the new value.

(iii). Press **Enter** on the keyboard.

(iv). Repeat Steps 8, 9a or 9b for each parameter.

10. Select either **Lower Block** (F1) or **Raise Block** (F2) as required.

Lower Block	Raise Block	Cancel	Next	Previous	Incr.	Decr.	Exit
--------------------	--------------------	--------	------	----------	-------	-------	------

11. Go to Step 27.

Toggling State of Individual Pins

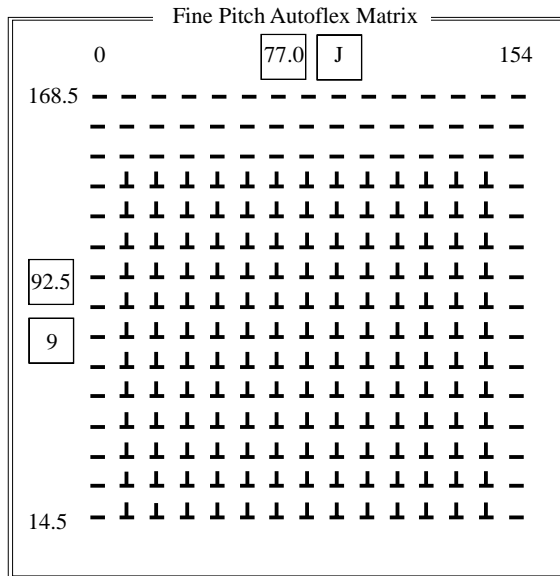
12. Use the **Left**, **Right**, **Up** and **Down** keys (F4 - F7), to position the highlighted cursor over the required section.

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	------	-------------	-------------	--------------	-----------	-------------	------

13. Select **Zoom** (F1).

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
-------------	------	-------------	------	-------	----	------	------

A close up view of the Fine Pitch Autoflex Matrix window is displayed:



NOTE

The figures down the right hand side of the template correspond to the figures on the MMI matrix and represent the distance from the front edge of the board. The figures across the top of the template are referenced to the centreline of the board, where as the MMI matrix is referenced to the fiducial reference point on the front edge of the board.

14. Use the **Left**, **Right**, **Up** and **Down** keys (F4 - F7), to highlight the required pin.

Toggle Pin	Mark Area	Cancel	Left	Right	Up	Down	Exit
------------	-----------	--------	-------------	--------------	-----------	-------------	------

15. Select **Toggle Pin** (F1).

Toggle Pin	Mark Area	Cancel	Left	Right	Up	Down	Exit
-------------------	-----------	--------	------	-------	----	------	------

16. Repeat Steps 14-15 for any other pins.

17. Go to Step 26.

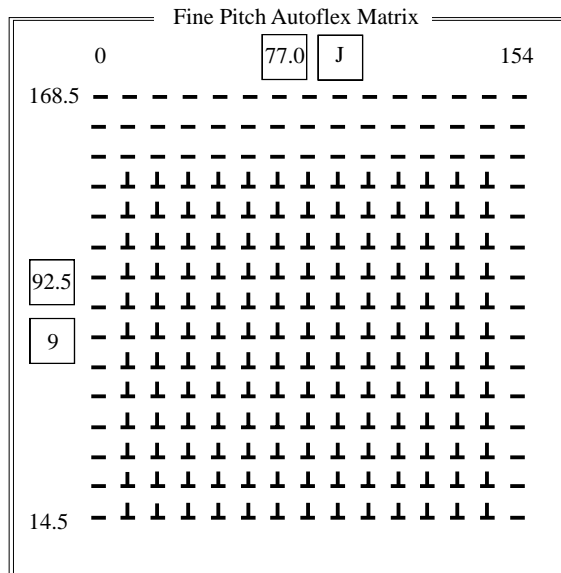
Toggling State of Pins in an Area

18. Use the **Left**, **Right**, **Up** and **Down** keys (F4 - F7), to position the highlighted cursor over the required section.

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	------	-------------	-------------	--------------	-----------	-------------	------

19. Select **Zoom** (F1).

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
-------------	------	-------------	------	-------	----	------	------



NOTE

The figures down the right hand side of the template correspond to the figures on the MMI matrix and represent the distance from the front edge of the board. The figures across the top of the template are referenced to the centreline of the board, where as the MMI matrix is referenced to the fiducial reference point on the front edge of the board.

20. Use the **Left**, **Right**, **Up** and **Down** keys (F4 - F7), to position the cursor at one corner of the required area.

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	------	-------------	-------------	--------------	-----------	-------------	------

21. Select **Mark Area** (F2).

Toggle Pin	Mark Area	Cancel	Left	Right	Up	Down	Exit
------------	------------------	--------	------	-------	----	------	------

22. Use the **Left, Right, Up** and **Down** keys (F4 - F7), to position the cursor at the opposite corner of the required area.

Toggle Area	End Mark	Cancel	Left	Right	Up	Down	Exit
-------------	----------	--------	-------------	--------------	-----------	-------------	------

23. Select **Toggle Area** (F1).

Toggle Area	End Mark	Cancel	Left	Right	Up	Down	Exit
--------------------	----------	--------	------	-------	----	------	------

24. Select **End Mark** (F2).

Toggle Area	End Mark	Cancel	Left	Right	Up	Down	Exit
-------------	-----------------	--------	------	-------	----	------	------

25. Repeat Steps 20-24 for any other areas.

26. Select **Exit** (F8).

Toggle Area	End Mark	Cancel	Left	Right	Up	Down	Exit
-------------	----------	--------	------	-------	----	------	-------------

27. Select **Save** (F2).

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	-------------	-------------	------	-------	----	------	------

28. Select **Set Tooling** (F3), pins all lower and setup for new configuration.

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	------	--------------------	------	-------	----	------	------

29. Select **Exit** (F8).

Zoom	Save	Set Tooling	Left	Right	Up	Down	Exit
------	------	-------------	------	-------	----	------	-------------

30. Select **Exit** (F8).

Change Autoflex	Save		Next	Previous	Incr.	Decr.	Exit
-----------------	------	--	------	----------	-------	-------	-------------

31. Select **Board Stop** (F4).

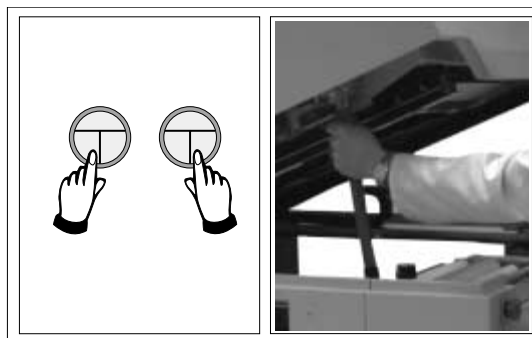
Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	-------------------	------------	------------	--------------	------

The camera moves to the board stop position. The board stop on the camera extends.

32. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

33. Raise the printhead using two button control. Fit the head prop.



34. Select **Board Clamps** (F3), to open the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

35. Slide a board along the rails to abut the board stop.

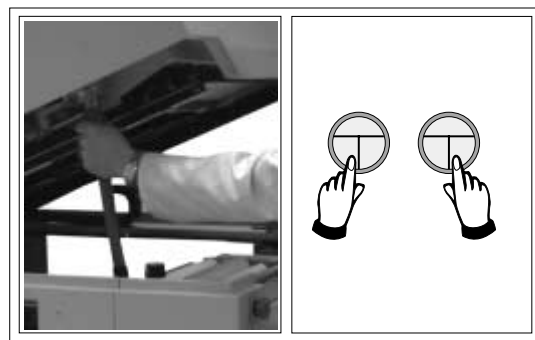
36. Select **Board Clamps** (F3), to close the clamps.

Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

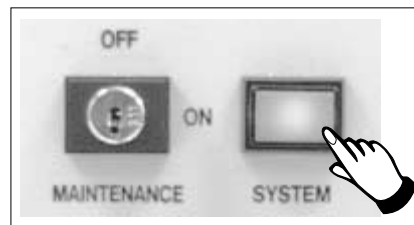
37. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

38. Remove the head prop. Lower the printhead using two button control.



39. Press the **System** button.



40. Select **Home Camera** (F4).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	--------------------	------------	------------	--------------	------

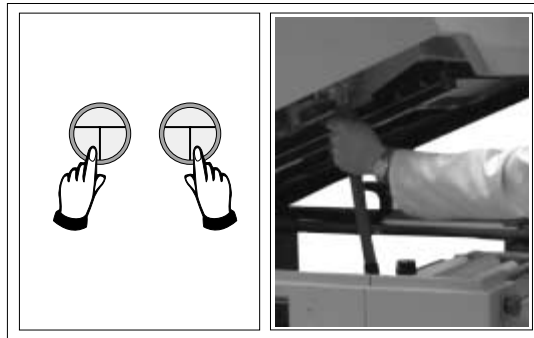
41. Select **Print Height** (F7).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	---------------------	------

42. Select **Raise Head** (F2).

	Raise Head					Home Position	Exit
--	-------------------	--	--	--	--	---------------	------

43. Raise the printhead using two button control. Fit the head prop.

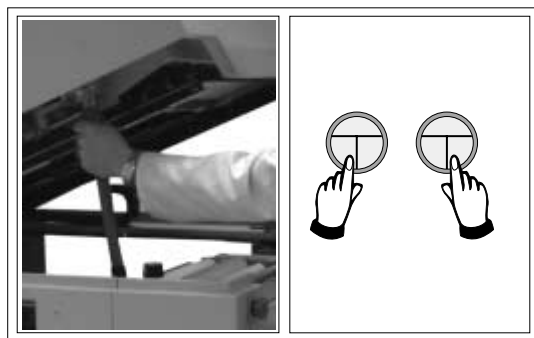


44. Check that the setup of the tooling is adequate for the board, adjust as necessary.

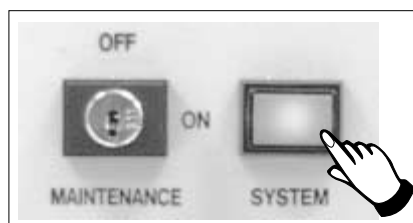
45. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

46. Remove the head prop. Lower the printhead using two button control.



47. Press the **System** button.



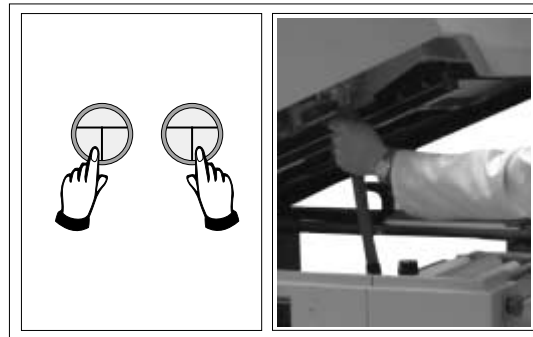
48. Select **Home Position** (F7).

	Raise Head					Home Position	Exit
--	------------	--	--	--	--	----------------------	------

49. Select **Raise Head** (F2).

Adjust	Raise Head	Remove Cleaner	Home Camera	Full Width	Load Width	Print Height	Exit
--------	-------------------	----------------	-------------	------------	------------	--------------	------

50. Raise the printhead using two button control. Fit the head prop.



51. Select **Board Clamps** (F3), to open the clamps.

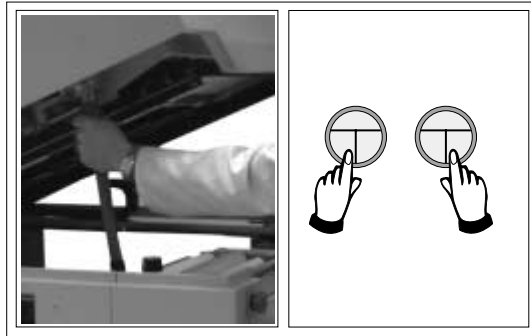
Adjust	Head	Board Clamps	Set Stop				
--------	------	---------------------	----------	--	--	--	--

52. Remove the board from the rails.

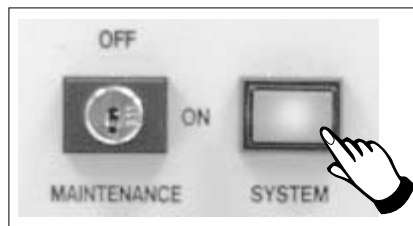
53. Select **Head** (F2).

Adjust	Head	Board Clamps	Set Stop				
--------	-------------	--------------	----------	--	--	--	--

54. Remove the head prop. Lower the printhead using two button control.



55. Press the **System** button.



56. Select **Exit** (F8).

Adjust	Raise Head	Remove Cleaner	Board Stop	Full Width	Load Width	Print Height	Exit
--------	------------	----------------	------------	------------	------------	--------------	-------------

57. Go to Stage 7.

STAGE 7

Vision System Setup The printer uses a vision system to carry out the following:

Introduction

- Stencil/Board Alignment
- 2Di Inspection (optional)
- Board Identification - Selective Print/Pass Through (optional)

After the board is fed to the board stop position, the camera moves into position to view the relative board and screen features. The information from these camera images is used by the vision system to identify the board, if selective print/pass through is enabled and to calculate the screen correction needed to align the screen to the board. The camera and vision system is also used for 2Di inspection, if enabled, for further information refer to the 2Di chapter in this manual.

Fiducials

A fiducial is an alignment mark which is produced as a part of the artwork of the board and the screen. There are normally several of these marks on each board, some of which are used for board alignment and some for alignment when placing components on the board. These marks, therefore, should be in the same relative position on both board and screen.

The vision system has a library of synthetic fiducials of the most commonly found shapes. The dimensions of these fiducials can be tailored by the operator to fit the fiducials on the board and screen. After the vision system has been taught these fiducial parameters, it is able to search the field of view of the camera and recognize any features which resemble these fiducials. The centre of the fiducial is calculated and used as the point of location.

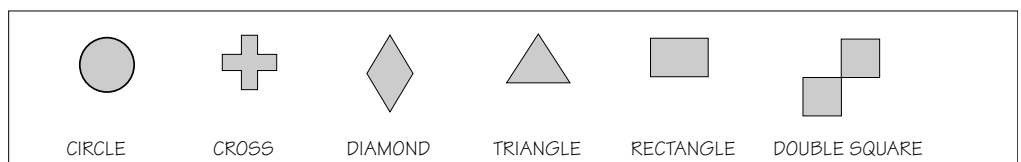
The vision system conducts a search in the field of view of the camera looking for any shape that resembles the programmed fiducial. After finding a shape it is assigned a score comparing its shape and size to the shape and size of the fiducial in the vision system memory. This score is set between 1 and 999, the better the fit the higher the score.

NOTE

However, this does not mean that a fiducial score of 900 for example aligns more accurately than a fiducial score of 700 for example.

This score is used, in conjunction with acceptance parameters set by the operator, to recognize the fiducial. The available fiducial shapes are:

- Circle
- Rectangle
- Diamond
- Triangle
- Double Square
- Cross



Fiducial Parameters There are a number of parameter values which need to be adjusted when setting up a fiducial.

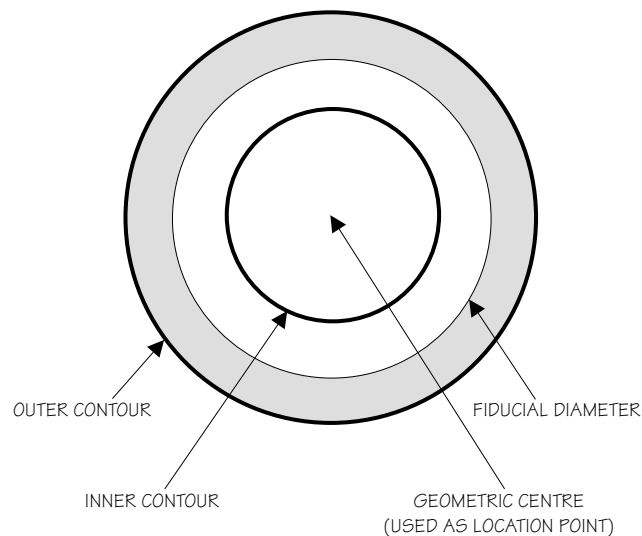
Fiducial Type This refers to the shape and dimensions of the fiducial.

Background The vision system needs to know if the fiducial is surrounded by a dark or light background compared to the fiducial colour.

Acceptance Score After the vision system has located a screen or board fiducial, it assigns a level of match of that fiducial compared to the fiducial strategy set in the vision system. This is given a score, the better the match the higher the score. The acceptance score is the minimum level, set by the operator, above which the vision system accepts the recognition of the fiducial.

Minimum	0
Maximum	999
Increment	10
Default	700

There are various dimensions of each fiducial shape which have to be set by the operator. As an example, here, the circular fiducial is described.



Fiducial Diameter This needs to be set to the exact diameter of the fiducial to achieve a satisfactory score.

Inner and Outer Contours These are set to eliminate any defects that may occur in the surface of either the fiducial or the background. The vision system ignores anything inside the inner contour and outside the outer contour. Increasing the distance between the inner and outer contour can, if the fiducial and background surfaces are variable, drastically affect the score level.

Select Mark A select mark is an identification mark, placed only on the board, to differentiate between boards to be printed and boards to be passed through the printer without printing. A select mark has the same properties and parameters as a fiducial, as described above. A select mark is only used with the selective print/pass through option, where different product boards are fed through the printer.

Video Model

The video model is an alternative to using fiducials for board alignment. Video model uses the correlation between the image of an area of the screen and the image of the same area of the board to align the two. This is useful if the board has no fiducials or the condition of the fiducials does not allow satisfactory recognition (see optimizing a video model).

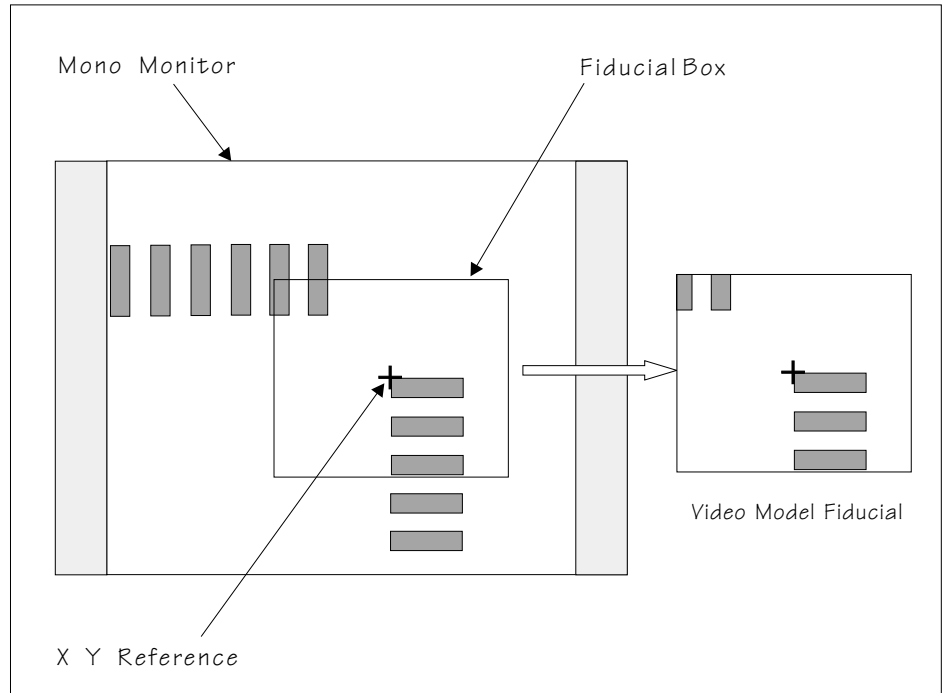
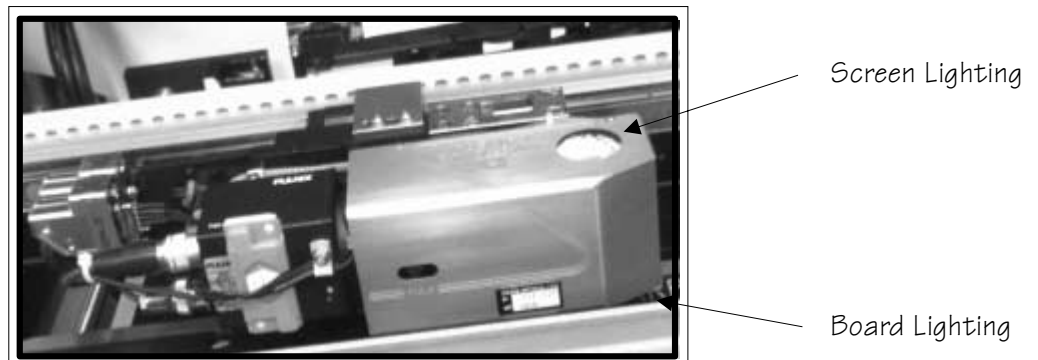


Image Quality

The vision system is able to accept a wide variation of quality of fiducial, therefore any variation in lighting normally causes no problems with fiducial recognition. However the image quality can be optimized by ensuring the lighting levels are correct. Changing the intensity of the vision illumination is achieved by the adjustment of the software controlled lighting during Fiducial setup.

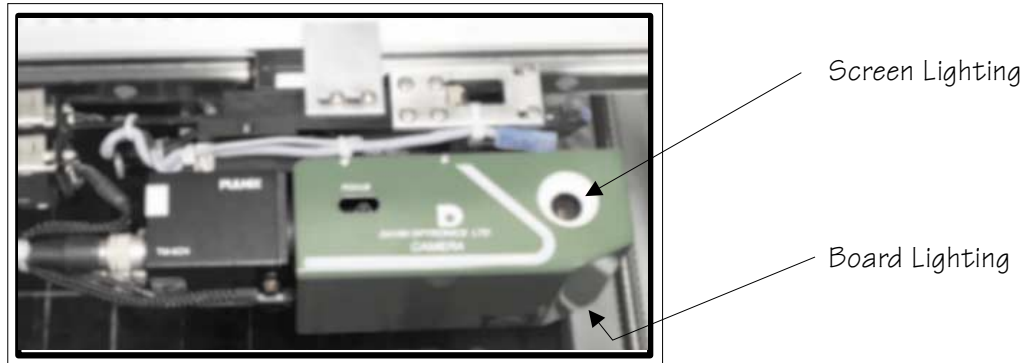
Silver Camera

The screen lighting and board lighting consists in each case of one LED for vertical lighting, and two LED rings for diffused lighting. The vertical and diffused lighting is adjustable via the fiducial inspection lighting parameters window and the inspection lighting parameters window.



Green Camera

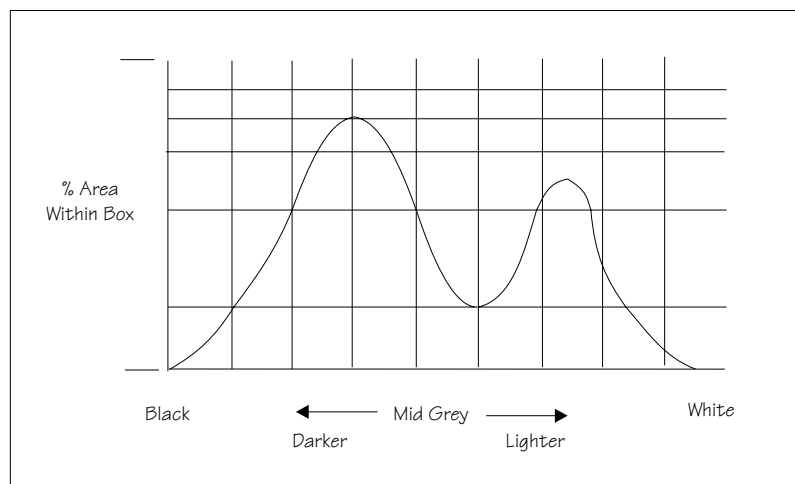
The screen lighting and board lighting consists in each case of a block of LED's for vertical lighting, and a LED ring of 12 LED's for oblique lighting. The vertical and oblique lighting is adjustable via the fiducial inspection lighting parameters window and the inspection lighting parameters window.



Histogram

The histogram gives a graphical representation of the grey scale values within the box set around the fiducial. As can be seen there are two peaks which represent the light and dark areas of the picture. Ideally there should be two distinct peaks, the separation of which can be changed by varying the lighting levels.

Experience of changing these parameters, while viewing the histogram, demonstrates their effects.

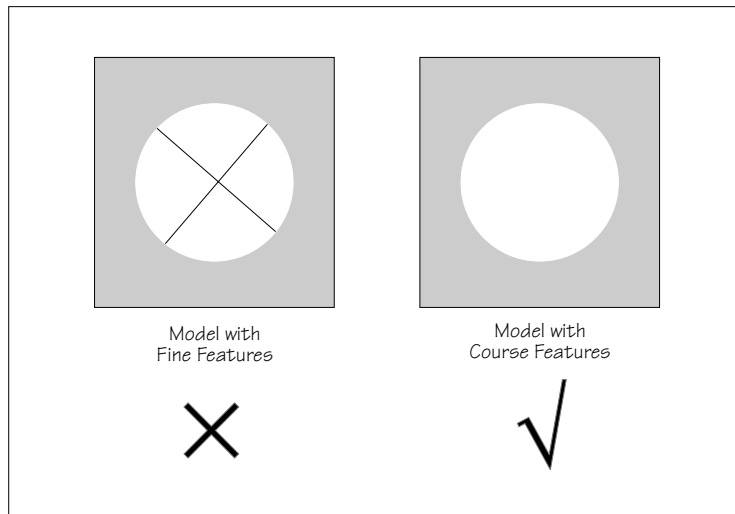


Optimizing a Video Model

When using a Video Model, selection of a good image shape is critical. The following are some basic guidelines for selection of an optimum image.

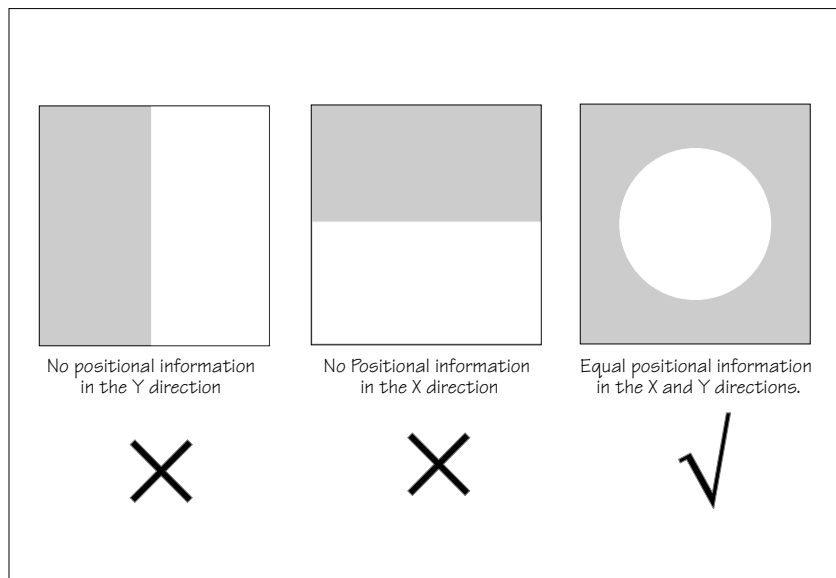
Fine And Course Features

As with fiducials, areas of a board selected as a Video Model should have shapes with a solid consistent tone within the boundaries (course features) and not shapes with inner lines or lettering (fine features):



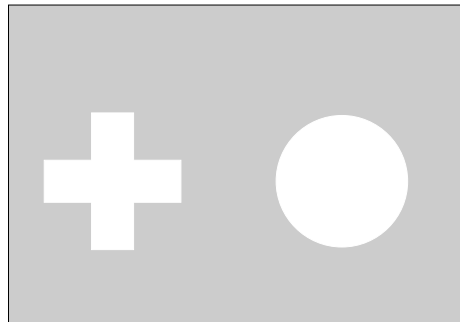
Positional Information

When selecting a Video Model, if the image shapes have edges all in the X direction or all in the Y direction, not enough positional information exists for the camera system. An image with good X and Y information is necessary for accurate positioning:



Target Level

Higher individuality of an image within the Video Model Box decreases the search time by limiting the number of possible targets:



Here there is little confusion as to which images are located and with a high score in this instance the Target Score could be set as low as 800 (Accept Score is set less than or equal to Target Score).



Here the confusion is greater, which is likely to cause several best fits to be above the Accept Score, eg 970, 780 and 630. This would require the Target Score to be set around 830. Setting a higher Target Score increases the search time but ensures the correct fiducial is chosen.

Preparing the Vision System

The vision system learns the fiducial during a board setup. The fiducial co-ordinates are entered into the product file during the editing of a default file. This enables the camera to find the fiducials initially. The setup needs to be run in step mode from the status page.

The following procedure is typical for all fiducial shapes, although in this instance a circle fiducial shape is referred to throughout.

Video Model

The procedure for creating a video model is very similar to that for a fiducial, throughout this following fiducial procedure, boxes like this contain alternative procedure steps, to allow the setup of a video model.

1. Select **Mode** (F1) till **Step** is indicated in the mode option on the screen.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
-------------	-----------	-----------	----------------	---------------	----------------	-----------------	------

2. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

3. Place the board on to the conveyor.

4. Select **Run** (F1).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	------------	--------------	--------	-------	---------	--------

5. Select **Auto Board** (F1).

Auto Board	Manual Board				Knead Paste		Exit
-------------------	--------------	--	--	--	-------------	--	------

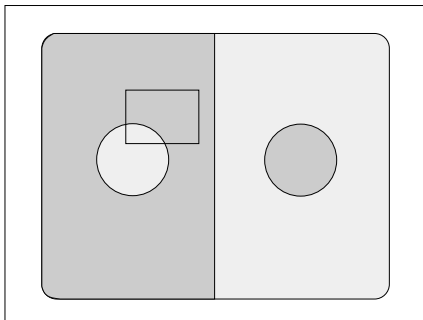
6. Select **Step** (F1).

Step	Head		Inspect Setup			Single	Exit
-------------	------	--	---------------	--	--	--------	------

7. Select **Step** (F1).

Step	Head		Inspect Setup			Single	Exit
------	------	--	---------------	--	--	--------	------

The board fiducial/select mark should be visible on the monochrome monitor.



If selective print/pass through is enabled, the image on the left hand side of the monitor is the board select mark. The right hand side of the monitor shows the corresponding position on the screen, which is a mirror image of the board without the select mark. While the select mark is being setup and the menu bar is as Step 8, the message **‘The form of this fiducial will select Print / Pass through.’** is displayed.

If the fiducial is in the field of view go to Step 10. If the fiducial is not in the field of view, continue with Step 8.

8. Select **Search Step** (F5).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
------	------	----------------	--------	--------------------	--------------	--------	------

For each press of Search Step the camera conducts an increasing spiral search to enable the operator to locate the fiducial. If this search is not successful the camera can be returned to its origin. Recheck the fiducial co-ordinates set in the product file.

9. Select **Search Reset** (F6).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
------	------	----------------	--------	-------------	---------------------	--------	------

When the fiducial is located move it to the centre of the screen.

10 Select **Adjust** (F4).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
------	------	----------------	---------------	-------------	--------------	--------	------

The co-ordinates of the fiducial in the field of view are now displayed on the screen.

BOARDFIDUCIAL1 CO-ORDINATES	
FIDUCIAL1 X	xxx mm
FIDUCIAL1 Y	xxx mm

Position the fiducial in the centre of the box graphic.

11. Use the **Next** and **Previous** keys (F4 - F5), to highlight each co-ordinate.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	-------	-------	------

12. Use the **Incr.** And **Decr.** Keys (F6 - F7), to change the parameter value and move the fiducial in the field of view.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	--------------	--------------	------

13. Select **Exit** (F8).

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

14. Select **Fiducial Setup** (F3).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
------	------	-----------------------	--------	-------------	--------------	--------	------

The monitor displays the following:

BoardFiducial 1	
Fiducial Type	Circle
Background	Dark
AcceptScore	700

Circle Parameters		
Diameter	1.80	mm
Inner Contour	0.40	mm
Outer Contour	0.40	mm

15. Select **Set Light** (F3).

Learn Fiducial	Locate Fiducial	Set Light	Next	Previous	Incr.	Decr.	Exit
-------------------	--------------------	----------------------	------	----------	-------	-------	------

A histogram is displayed on the monitor and the Fiducial Lighting Parameters window is displayed on the status page.

For the silver camera part number 145016, the fiducial lighting parameters window is shown below.

Fiducial Lighting Parameters		
Screen Vertical	8	
Screen Inner LR	8	
Screen Inner FR	8	
Screen Outer LR	8	
Screen Outer FR	8	
Board Vertical	8	
Board Inner LR	8	
Board Inner FR	8	
Board Outer LR	8	
Board Outer FR	8	
Window Left	-1.0	mm
Window Top	-1.5	mm
Window Width	2.0	mm
Window Height	2.0	mm

For the green camera part number 145550, the fiducial lighting parameters window is shown below.

Fiducial Lighting Parameters		
Screen Vertical	8	
Screen Oblique	8	
Board Vertical	8	
Board Oblique	8	
Window Left	-1.0	
Window Top	-1.5	
Window Width	2.0	
Window Height	2.0	

16. Use the **Next**, **Previous**, **Incr.** and **Decr.** keys (F4 - F7), to highlight and adjust the lighting parameters to a level whereby the fiducials are just whiting out, without blooming, default level 8 is usually adequate for the majority of setups.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	--------------	--------------	------

17. Select **Exit** (F8).

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

18. Use the **Next**, **Previous**, **Incr.** and **Decr.** keys (F4 - F7), to highlight and adjust each of the board fiducial parameters in the left hand box on the monitor.

Learn Fiducial	Locate Fiducial	Set Light	Next	Previous	Incr.	Decr.	Exit
----------------	-----------------	-----------	-------------	-----------------	--------------	--------------	------

Board Fiducial 1	
Fiducial Type	Circle
Background	Dark
Accept Score	700

Video Model

To setup a video model, choose Video Model from the Fiducial Type Parameter.

19. Select **Learn Fiducial** (F1).

Learn Fiducial	Locate Fiducial	Set Light	Next	Previous	Incr.	Decr.	Exit
-----------------------	-----------------	-----------	------	----------	-------	-------	------

Setup the fiducials appearing in the right hand box on the monitor.

Circle Parameters		
Position X	x x x	mm
Position Y	x x x	mm
Diameter	x x x	mm
Inner Contour	xxx	mm
Outer Contour	xxx	mm

Video Model

When using video model the parameters are as follows:
Video Model, Position X, Position Y, Fiducial X, Fiducial Y

20. Use the **Next**, **Previous**, **Incr.** and **Decr.** keys (F4 - F7), to highlight and adjust each circle parameter in turn to obtain the best fit over the fiducial.

Learn Fiducial			Next	Previous	Incr.	Decr.	Exit
----------------	--	--	-------------	-----------------	--------------	--------------	------

NOTE

Once aligned it may be necessary to change the line fiducial dimension to achieve a better fit.

21. Select **Learn Fiducial** (F1). The message **'Learning Fiducial - Please Wait'** is displayed in the message prompt bar.

Learn Fiducial			Next	Previous	Incr.	Decr.	Exit
-----------------------	--	--	------	----------	-------	-------	------

22. Select **Exit** (F8).

Learn Fiducial			Next	Previous	Incr.	Decr.	Exit
----------------	--	--	------	----------	-------	-------	-------------

23. Select **Locate Fiducial** (F2).

Learn Fiducial	Locate Fiducial	Set Light	Next	Previous	Incr.	Decr.	Exit
----------------	------------------------	-----------	------	----------	-------	-------	------

A figure appears on the monitor indicating the score of the fit between the synthetic fiducial and the actual fiducial. The synthetic fiducial parameters may need resetting and relearning to obtain a better figure if there are other features in the camera window.

Location			
Fiducial	X	Y	Score
1	0.038	-0.017	984

24. Select **Exit** (F8).

	Locate Fiducial						Exit
--	-----------------	--	--	--	--	--	-------------

25. Select **Exit** (F8).

Learn Fiducial	Locate Fiducial	Set Light	Next	Previous	Incr.	Decr.	Exit
----------------	-----------------	-----------	------	----------	-------	-------	-------------

26. Select **Step** (F1).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
-------------	------	----------------	--------	-------------	--------------	--------	------

NOTE

If selective print/pass through is enabled, the first board fiducial should now be displayed on the monitor. In this case repeat Steps 14 - 26 for this fiducial.

The first screen fiducial should now be displayed on the monitor.

27. Repeat Steps 14 - 25 for this fiducial.

28. Continue for other selected fiducials by selecting **Step** at the end of each fiducial setup.

29. After Step 28 for the second screen fiducial the message **'Saving Fiducial Data - Please Wait Board data file saved'** is displayed.

After aligning screen to board the camera checks all four fiducial positions.

30. Select **Exit** (F8).

Step						Single	Exit
------	--	--	--	--	--	--------	-------------

31. Select **Exit** (F8).

Auto Board	Manual Board						Exit
------------	--------------	--	--	--	--	--	-------------

STAGE 8

Load Paste, Run a Product in Step Mode

If using squeegees with paste dispenser continue with Section Auto Paste Dispense. If using squeegees without paste dispenser go to Section Manual Paste Load. If using ProFlow go to Section Run a Product in Step Mode.

Auto Paste Dispense 1. Select **Paste Load** (F3).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	-------------------	--------------	--------	-------	---------	--------

2. Select **Auto Dispense** (F1).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
----------------------	-------------	--	--------------	--	--------------	--	------

3. Select **Exit** (F8).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	-------------	--	--------------	--	--------------	--	-------------

4. Go to Section Run a Product in Step Mode.

Manual Paste Load 1. Select **Paste Load** (F3).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	-------------------	--------------	--------	-------	---------	--------

2. Select **Manual Load** (F2).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	--------------------	--	--------------	--	--------------	--	------

3. Lift the front printhead cover.



WARNING

SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.

4. Load the solder paste onto the screen.



5. Lower the front printhead cover.

6. Press the **System** button.

7. Select **Continue** (F1).

Continue							
-----------------	--	--	--	--	--	--	--

8. Select **Exit** (F8).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	-------------	--	--------------	--	--------------	--	-------------

Run a Product in Step Mode

1. Select **Run** (F1).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	------------	--------------	--------	-------	---------	--------

2. Load a board on to the conveyor.

3. Select **Auto Board** (F1).

Auto Board	Manual Board				Knead Paste		Exit
-------------------	--------------	--	--	--	-------------	--	------

4. Select **Step** (F1).

Step	Head		Inspect Setup			Single	Exit
-------------	------	--	---------------	--	--	--------	------

5. Select **Step** (F1).

Step	Head		Inspect Setup			Single	Exit
-------------	------	--	---------------	--	--	--------	------

6. Select **Step** (F1).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
-------------	------	----------------	--------	-------------	--------------	--------	------

7. Select **Step** (F1).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
-------------	------	----------------	--------	-------------	--------------	--------	------

8. Select **Step** (F1).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
-------------	------	----------------	--------	-------------	--------------	--------	------

9. Select **Step** (F1).

Step	Head	Fiducial Setup	Adjust	Search Step	Search Reset	Single	Exit
-------------	------	----------------	--------	-------------	--------------	--------	------

10. Select **Step** (F1).

Step			Inspect Setup			Single	Exit
-------------	--	--	---------------	--	--	--------	------

11. Select **Auto Board** (F1).

Auto Board	Manual Board						Exit
-------------------	--------------	--	--	--	--	--	------

12. Remove the board from the conveyor and inspect the print for alignment. If the alignment is satisfactory go to Step 16, if the alignment needs adjusting, calculate the following:
X Offset, Y Offset and θ Offset.

13. Select **Edit Data** (F3).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

14. Enter the X Offset, Y Offset and θ Offset, calculated in Step 12 to both the Forward and Reverse set of offsets.

15. Repeat Steps 1 - 12 until the alignment is correct for both a forward and reverse print.

16. If 2D Inspection is being used continue with Stage 9, if 2D Inspection isn't being used go to Stage 10.

STAGE 9

2Di Setup

For a complete explanation of 2Di and its setup refer to the 2D Inspection Chapter.

STAGE 10

Running a Product in Run Mode

1. Select **Setup** (F6)

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	--------------	---------	--------

2. Select **Mode** (F1) until Auto is indicated in the mode option on the screen.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
-------------	-----------	-----------	----------------	---------------	----------------	-----------------	------

3. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

4. Select **Run** (F1). If squeegees are being used continue with Step 5, if ProFlow is being used go to Step 19.

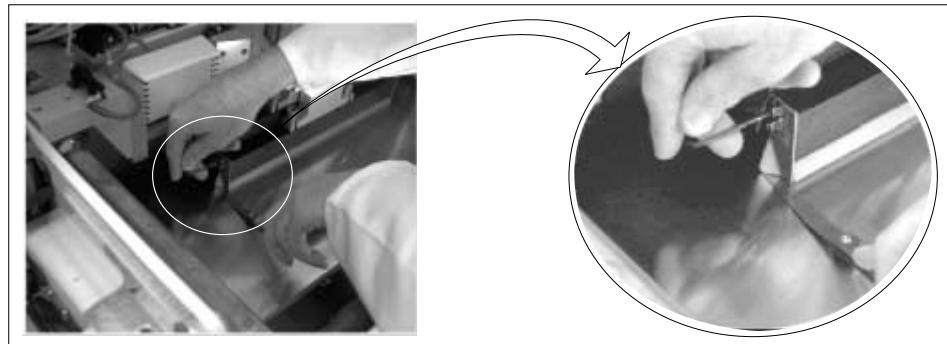
Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	------------	--------------	--------	-------	---------	--------

5. During the first print stroke, when the squeegee is down printing on the board, select **Stop Cycle** (F2). The print cycle stops and the printer lid bolt releases allowing access to the print carriage.

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste	Adjust Inspect	
---------	-------------------	------------	--------------	--------	-------------	----------------	--

6. Lift the front printhead cover.
7. Release the screws holding one paste deflector allowing it to drop into contact with the screen.

- Insert a 0.25mm feeler between the deflector and the screen. Tighten the screws checking that the 0.25mm gap remains.



- Repeat Steps 7 and 8 for the other deflector.

10. Lower the front printhead cover.

11. Press the **System** button.

12. Select **Continue** (F1).

Continue							
-----------------	--	--	--	--	--	--	--

13. After the squeegee has moved approximately 20mm, select **Stop Cycle** (F2).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste	Adjust Inspect	
---------	-------------------	------------	--------------	--------	-------------	----------------	--

14. Lift the front printhead cover. Check the deflectors are not touching the screen.

15. Lower the front printhead cover.

16. Press the **System** button.

17. Select **Continue** (F1).

Continue							
-----------------	--	--	--	--	--	--	--

18. Repeat Steps 5 - 17 for the other squeegee.

19. The printer operates continuously. The menu bar displays the following options, these may be selected at any time during a print run:

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste	Adjust Inspect	
---------	------------	------------	--------------	--------	-------------	----------------	--

- End Run** Selecting this option stops the printer on completion of the current print cycle.
- Stop Cycle** Selecting this option stops the printer immediately, halting all actions.
- Paste Load** Selecting this option allows the operator to load paste to the screen either manually or automatically.
- Clean Screen** Selecting this option allows the operator to clean the screen in addition to the programmed cleaning intervals.
- Adjust** Selecting this option allows the operator to adjust any of the main process parameters displayed on the pop-up menu without having to access the main menu or stop the machine.
- The machine continues to run using the existing values, when **Exit** (F8) is selected the new values are used.
- To save the new values, select **Setup** (F6), select **Edit Data** (F3), select **Save** (F2), select **Exit** (F8).
- Knead Paste** Selecting this option runs the knead paste process in addition to the programmed cleaning intervals.
- Adjust Inspect** Selecting this option allows the operator to edit 2D inspection parameters.
- NOTE*
Global Limits, Limit Sets and Sit parameters can be edited. Site Co-ordinates can not be adjusted. Any changes made to inspection parameters are saved on exit.

MENU PARAMETERS

Each product has a set of parameters which are unique to that particular product and which need to be setup to obtain acceptable printing results. These parameters are listed below with a definition of each as an aid to machine setup.

NOTE

Machines running software version 2.06 and above have the ability to read product files generated by a DEK 288 printing machine.

Parameter	Definition																						
Product Name	The file name for the particular product. The name can consist of up to eight alphanumeric characters with no punctuation.																						
Product ID	The product ID is a parameter that allows a description of the product. This string may be up to 32 characters long, but only the first 20 characters are displayed.																						
Product Barcode (265GSX only)	The barcode number for the particular product. The barcode can be up to twenty characters long. This parameter is only used if the machine is fitted with a product barcode reader.																						
Screen Barcode (265GSX only)	The barcode number that identifies the particular screen to be used with this particular product. The barcode can be up to twenty characters long. If the screen has a barcode printed on it in the correct place and the machine is initialized to read the code, the screen is checked to ensure it is correct after it has been fitted. If it is incorrect a message is displayed on the monitor. This parameter is only used if the machine is fitted with a product barcode reader.																						
Board Length	<p>This parameter is used to set the default values for the board stop position in the X direction, the paste dispensing area, and the AutoFlex reset columns. The maximum value depends on the type of screen selected.</p> <table> <tr> <td>Min. Allowable</td> <td>50mm (see Note 1.)</td> </tr> <tr> <td>Max. Allowable</td> <td></td> </tr> <tr> <td> 265</td> <td>508mm (see Notes 1. and 2.)</td> </tr> <tr> <td> 255</td> <td>460mm</td> </tr> <tr> <td> 249</td> <td>430mm</td> </tr> <tr> <td> Fuji</td> <td>460mm</td> </tr> <tr> <td> Sanyo</td> <td>420mm</td> </tr> <tr> <td> Heraeus</td> <td>344mm</td> </tr> <tr> <td></td> <td>In increments of 0.1mm</td> </tr> </table> <p><i>NOTE</i></p> <ol style="list-style-type: none"> <i>With remote board stop fitted</i> <table> <tr> <td> Min. Allowable</td> <td>130mm</td> </tr> <tr> <td> Max. Allowable</td> <td>508mm (see Note 2.)</td> </tr> </table> <i>With the large board option the Max. Allowable is 620mm. Although the maximum parameter is 620mm boards of 664mm can be loaded.</i> 	Min. Allowable	50mm (see Note 1.)	Max. Allowable		265	508mm (see Notes 1. and 2.)	255	460mm	249	430mm	Fuji	460mm	Sanyo	420mm	Heraeus	344mm		In increments of 0.1mm	Min. Allowable	130mm	Max. Allowable	508mm (see Note 2.)
Min. Allowable	50mm (see Note 1.)																						
Max. Allowable																							
265	508mm (see Notes 1. and 2.)																						
255	460mm																						
249	430mm																						
Fuji	460mm																						
Sanyo	420mm																						
Heraeus	344mm																						
	In increments of 0.1mm																						
Min. Allowable	130mm																						
Max. Allowable	508mm (see Note 2.)																						
Board Width	<p>This parameter sets the rail width for this particular product. It is also used to set a default value for the print stroke, the clean screen, the board stop position in the Y direction, and the autoflex rows. The maximum value depends on the screen type selected.</p> <table> <tr> <td>Min. Allowable</td> <td>40mm</td> </tr> <tr> <td>Max. Allowable</td> <td></td> </tr> <tr> <td> 265</td> <td>508mm</td> </tr> <tr> <td> 255</td> <td>432mm</td> </tr> <tr> <td> 249</td> <td>330mm</td> </tr> <tr> <td> Fuji</td> <td>460mm</td> </tr> <tr> <td> Sanyo</td> <td>284mm</td> </tr> <tr> <td> Heraeus</td> <td>344mm</td> </tr> <tr> <td></td> <td>In increments of 0.1mm</td> </tr> </table> <p><i>NOTE</i></p> <p><i>With remote board stop fitted</i></p> <table> <tr> <td> Min. Allowable</td> <td>119mm</td> </tr> <tr> <td> Max. Allowable</td> <td>508.5mm</td> </tr> </table>	Min. Allowable	40mm	Max. Allowable		265	508mm	255	432mm	249	330mm	Fuji	460mm	Sanyo	284mm	Heraeus	344mm		In increments of 0.1mm	Min. Allowable	119mm	Max. Allowable	508.5mm
Min. Allowable	40mm																						
Max. Allowable																							
265	508mm																						
255	432mm																						
249	330mm																						
Fuji	460mm																						
Sanyo	284mm																						
Heraeus	344mm																						
	In increments of 0.1mm																						
Min. Allowable	119mm																						
Max. Allowable	508.5mm																						

Parameter	Definition
Board Thickness	This parameter is used by the machine to set correct vision and print heights. Minimum 0.20mm Maximum 6.00mm Increments 0.1mm
Underside Clearance	This parameter determines the clearance provided between the underside of the board and the top of the machine tooling to allow for components on the underside of the board. Minimum 3mm Maximum 42mm Increment 0.1mm Default 19mm
Tooling Type	This determines which type of board support is to be used with this particular product. Options are: Autoflex, Vacuum, Magnetic Pillars, Vac for Flex See Tooling
Flatten Vacuum Delay	This parameter determines the duration of vacuum applied whilst the board is pressed against the underside of the screen with Vac for Flex enabled. Minimum 0 sec Maximum 5 secs Default 2 secs Increment 0.1 sec
Separation Vacuum Delay	This parameter determines the duration of the vacuum applied after printing and before the rising table is lowered to separation height with Vac for Flex enabled. Minimum 0 sec Maximum 5 secs Default 2 secs Increment 0.1 sec
Print Front Limit	This determines the distance from the front edge of the board that printing must start. Minimum -6.5mm Maximum Board width set into the board file Increment 0.1mm Default 0mm NOTE <i>With Paste Trails enabled or ProFlow fitted the minimum value is 0mm</i>
Print Rear Limit	This determines the distance from the rear edge of the board that printing must start. Minimum -6.5mm Maximum Board width set into the board file Increment 0.1mm Default 0mm NOTE <i>With Paste Trails enabled or ProFlow fitted the minimum value is 0mm</i>
Board Stop X	This parameter determines the distance from the centre line of the machine to the board stop position. Minimum 50mm Maximum 310mm Increment 0.1mm Default Half of the board length set in the board file, (Board located centrally) NOTE <i>Not used while remote board stop is fitted.</i>

Parameter	Definition
Board Stop Y	<p>This parameter determines the distance from the fixed rail to the board stop position.</p> <p>Minimum 25mm Maximum Board width minus 20mm Increment 0.1mm Default Two thirds of the board width</p> <p><i>NOTE</i> <i>Not used while remote board stop is fitted.</i></p>
Remote Board Stop X	<p>This parameter determines the displacement of the remote board stop from the camera reference position.</p> <p>Minimum Minimum Board Length ÷ 2 Maximum Board Length Increment 0.1 Default Board Length ÷ 2</p> <p><i>NOTE</i> <i>Only used while remote board stop is fitted.</i></p>
Right Feed Delay	<p>This parameter sets a time delay on the board stop to allow for irregular shaped boards when fed from the right.</p> <p>Minimum 0sec Maximum 3secs Increments 0.1sec steps</p> <p><i>NOTE</i> <i>Not used while remote board stop is fitted.</i></p>
Alignment Weighting	<p>This is only used in 2 fiducial mode. This parameter sets a value determining how much of the fiducial spacing error is assigned to fiducial 2.</p> <p>Minimum 0% Maximum 100% Increment 1% Default 50% See vision system</p>
X Align Weighting	<p>This is only used in 3 fiducial mode. This parameter sets a value determining where the X axis alignment should be optimized.</p> <p>Minimum 0% Maximum 100% Increment 1% Default 50% See vision system</p>
Y Align Weighting	<p>This is only used in 3 fiducial mode. This parameter sets a value determining where the Y axis alignment should be optimized.</p> <p>Minimum 0% Maximum 100% Increment 1% Default 50% See vision system</p>
Alignment Mode	<p>This parameter determines the mode used for board to screen alignment. The Non Vision option is only available from the configuration file. Options available are: 2 fiducial; 3 fiducial.</p> <p>Default 2 fiducial</p>
Fiducial 1 X coordinate	<p>Distance of first fiducial from the right or left hand edge of the board (configuration dependent).</p> <p>Minimum 1mm Maximum Board Length Increment 0.1mm Default 1mm</p>

Parameter	Definition
Fiducial 1 Y coordinate	Distance of the first fiducial from the front edge of the board. Minimum 1mm Maximum Board Width Increment 0.1mm Default 1mm
Fiducial 2 X coordinate	Distance of second fiducial from the right or left hand edge of the board (configuration dependent). Minimum 1mm Maximum Board Length Increment 0.1mm Default 1mm
Fiducial 2 Y coordinate	Distance of the second fiducial from the front edge of the board. Minimum 1mm Maximum Board Width Increment 0.1mm Default 1mm
Fiducial 3 X coordinate	Distance of third fiducial from the right or left hand edge of the board (configuration dependent). Minimum 1mm Maximum Board Length Increment 0.1mm Default 1mm
Fiducial 3 Y coordinate	Distance of the third fiducial from the front edge of the board. Minimum 1mm Maximum Board Width Increment 0.1mm Default 1mm
Select Mark X	Distance of the select mark from the right or left hand edge of the board (configuration dependent). Minimum 0mm Maximum Board Length Increment 0.1mm Default 148.5mm <i>NOTE</i> <i>Only used while Selective Print/Pass is enabled in Set Preferences.</i>
Select Mark Y	Distance of the select mark from the front edge of the board (configuration dependent). Minimum 0mm Maximum Board Width Increment 0.1mm Default 13mm <i>NOTE</i> <i>Only used while Selective Print/Pass is enabled in Set Preferences.</i>
Board 1 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Board 2 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Board 3 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Select Mark Type	This determines the type of model to be used on the board for the select mark. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system <i>NOTE</i> <i>Only used while Selective Print/Pass is enabled in Set Preferences.</i>

Parameter	Definition
Screen 1 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Screen 2 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Screen 3 Fiducial Type	This determines the type of model to be used for this fiducial. Options are Circle; Rectangle; Diamond; Triangle; Double Square; Cross; Video model. See vision system
Screen Image	The position of the image in the screen frame. Options available are EDGE justified and CENTRE Justified. Edge justified only is permitted for Sanyo and Fuji frames. <i>NOTE</i> <i>This parameter is not displayed, if Screen Size in Set Preferences has been selected to Screen Library.</i>
Custom Screen	This option allows user definable screen image positions. Selection of this parameter activates the Print Area Length, Print Area Width and Distance To Image. Options are: ENABLED; DISABLED <i>NOTE</i> <i>The Custom Screen parameter is displayed on the 265Lt but is only available on the 265GSX machine.</i> <i>This parameter is not displayed, if Screen Size in Set Preferences has been selected to Screen Library.</i>
Distance To Image	The meaning of this parameter varies, depending on whether an image is centre or edge justified. For centre justified images, the dimension is the distance from the outside rear of the screen frame to the centre of the image. For edge justified images, the dimension is the distance from the outside rear of the screen frame to the front edge of the board. This parameter field only appears if Custom Screen has been selected Minimum 306mm Maximum 645mm Increments 0.1mm
Print Area Length	This is the maximum printable distance in the Y direction, ie the maximum distance the squeegee can travel, front to back. This parameter field only appears if Custom Screen has been selected. Minimum 100mm Maximum 508.5mm Increments 0.1mm
Print Area Width	This is the maximum length of squeegee that could be fitted to the printer, taking into account screen frame and the amount of mesh surrounding the mask. This is also the maximum length of paste that can be dispensed. This parameter field only appears if Custom Screen has been selected Minimum 100mm Maximum 510mm Increments 0.1mm
Screen Adapter	The type of screen adapter needed, if any, for the screen to be used for this product. Options available are NONE, 255, SANYO, HERAEUS, 20 X 20 and 12 X12. <i>NOTE</i> <i>This parameter is not displayed, if Screen Size in Set Preferences has been selected to Screen Library.</i>
Forward X offset	Programmable offset of the print on the board when printing from the rear. A positive offset moves the print to the right of the board. Minimum -1.0mm Maximum +1.0mm Increment 0.004mm

Parameter	Definition
Forward Y offset	Programmable offset of the print on the board when printing from the rear. A positive offset moves the print to the rear of the board. Minimum -1.0mm Maximum +1.0mm Increment 0.004mm
Forward θ offset	Programmable offset of the print on the board when printing from the rear. A positive offset moves the print in a clockwise direction. Minimum -1000 arc seconds Maximum +1000 arc seconds Increment 2 arc seconds
Reverse X offset	Programmable offset of the print on the board when printing from the front. A positive offset moves the print to the right of the board. Minimum -1.0mm Maximum +1.0mm Increment 0.004mm
Reverse Y offset	Programmable offset of the print on the board when printing from the front. A positive offset moves the print to the rear of the board. Minimum -1.0mm Maximum +1.0mm Increment 0.004mm
Reverse θ offset	Programmable offset of the print on the board when printing from the front. A positive offset moves the print in a clockwise direction. Minimum -1000 arc seconds Maximum +1000 arc seconds Increment 2 arc seconds
Print Mode	This parameter sets the mode of operation of the machine. Available modes are: PRINT/PRINT, PRINT/FLOOD, FLOOD/PRINT, ADHESIVE. The default is PRINT/PRINT. Selecting Adhesive from this parameter opens the separation delay and print vacuum mode.
Front Print Speed	This parameter sets the speed across the screen when printing. Minimum 2mm/sec Maximum 150mm/sec Increments 1mm/sec Default 10mm/sec
Rear Print Speed	This parameter sets the speed across the screen when printing. Minimum 2mm/sec Maximum 150mm/sec Increments 1mm/sec Default 10mm/sec
Front Pressure	This parameter sets the force applied by the front squeegee during its print stroke. Minimum 0kg Maximum 20Kg Increments 0.2Kg
Knead Off-image	This parameter sets whether ProFlow is to knead in an off-image area of the stencil. Options are: Enabled; Disabled Default Enabled
Knead Before Printing	This parameter sets ProFlow to knead before printing the first board and the amount of boards to be printed between kneading. Minimum 0 (disables knead before printing) Maximum 100 Increment 1 Default 0 NOTE <i>This parameter is only displayed, if knead off-image is set to enabled.</i>

Parameter	Definition
Stencil Protection	This parameter sets whether tooling to support the stencil, outside the board and clamp envelopes, is in use. Options are: Not Fitted; Fitted Default Fitted <i>NOTE</i> <i>This parameter is only displayed while ProFlow is fitted.</i>
Rear Pressure	This parameter sets the force applied by the rear squeegee during its print stroke. Minimum 0kg Maximum 20Kg Increments 0.2Kg
Print Gap	This parameter sets the gap required between the screen and board to be printed during the print stroke. Minimum 0mm Maximum 6mm Increments 0.025mm
Separation Speed	This parameter sets the speed at which the first 3mm of separation of board and screen occurs. Minimum 0.1mm/sec Maximum 20mm/sec Increments 0.1mm/sec
Separation Distance	This parameter sets the separation distance between board and screen. The parameter can help increase cycle time when a low separation speed is used by decreasing the separation distance. Minimum 0.0mm Maximum 3.0mm Increments 0.1mm Default 3.0mm
Separation Delay	This parameter is the time in seconds that the table delays before lowering. This delay occurs during screen cleaning and after the flood. This parameter only becomes available when Adhesive has been selected in the Print Mode parameter.
Print Deposits	This parameter sets the number of consecutive print strokes carried out on one substrate. Select 1, 2 or 3 Default 1
ProFlow Cassette	This parameter sets the size of the transfer head used by the ProFlow unit. Size may be one of the following: 300mm 400mm 500mm <i>NOTE</i> <i>For 350mm and 450mm transfer heads, set to 400mm and 500mm respectively.</i>
ProFlow System Pressure	This is the amount of print pressure (downward force) applied onto the stencil by the ProFlow unit. Maximum 20Kg Minimum 0kg Increments 0.2Kg Default 0
ProFlow Paste Pressure	This is the pressure applied to paste in the ProFlow unit while kneading and printing. Maximum 4 bar Minimum 0.2 bar Increments 0.2 bar Default 2 bar <i>NOTE</i> <i>This parameter is only available if the software controlled regulator is fitted.</i>

Parameter	Definition
ProFlow Idle Pressure	<p>This is the pressure applied to paste in the ProFlow unit between kneading and printing, and between print strokes.</p> <p>Maximum 4 bar Minimum 0 bar Increments 0.2 bar Default 0.4 bar</p> <p><i>NOTE</i> <i>This parameter is only available if the software controlled regulator is fitted.</i></p>
Flood Speed	<p>This parameter sets the flood blade speed across the screen when performing a flood stroke.</p> <p>Minimum 10mm/sec Maximum 150mm/sec Increments 1mm/sec</p>
Flood Height	<p>This parameter sets the height of the flood blade above the screen during a flood stroke.</p> <p>Minimum 0mm Maximum 5mm Increments 0.02mm</p>
Dwell Height	<p>The parameter allows the user to set the squeegee dwell height. Setting of a lower height helps the media to stay evenly spread across the length of the squeegee when a less viscous media is used. Setting a high height allows viewing of the paste roll.</p> <p>Minimum 5mm Maximum 40mm Increment 1mm Default 30mm</p>
Dwell Speed	<p>This preference adjusts the speed at which the squeegee moves to dwell height. A slower speed helps to reduce the spreading of a less viscous media, ie flux. It should be noted that decreasing this speed causes the cycle time to increase.</p> <p>Minimum 10mm/sec Maximum 30mm/sec Increment 1mm/sec Default 24mm/sec</p>
Screen Clean Mode 1 (Including Vacuum)	<p>This parameter sets the mode of operation of the screen cleaner for the first clean mode. When selected this parameter opens a window that allows a screen clean option sequence to be chosen. The sequence includes six stages, each of which may be one of the following cleaning operations: WET, DRY, VAC, NONE A warning is given if the end stroke is wet.</p>
Screen Clean Rate 1	<p>This parameter sets the number of print cycles between the cycling of the screen cleaner for the first screen clean rate.</p> <p>Minimum 0 (Screen cleaner off) Maximum 200 Increment 1</p>
Screen Clean Mode 2 (Including Vacuum)	<p>This parameter sets the mode of operation of the screen cleaner for the second clean mode. When selected this parameter opens a window that allows a screen clean option sequence to be chosen. The sequence includes six stages, each of which may be one of the following cleaning operations: WET, DRY, VAC, NONE A warning is given if the end stroke is wet.</p>
Clean Screen Rate 2	<p>This parameter sets the number of print cycles between the cycling of the screen cleaner for the second screen clean rate.</p> <p>Minimum 0 (Screen cleaner off) Maximum 200 Increment 1</p>
Print Vacuum mode	<p>This parameter determines the state of the vacuum during the print and flood stages of the cycle. The parameter is only available if Adhesive has been selected in the Print Mode parameter. ON, OFF</p>

Parameter	Definition
Dry Clean Speed	<p>This parameter sets the speed of the screen clean dry wipe for optimization of the blue or silver USC and the speed of the screen clean return stroke for the Vortex USC.</p> <p>Minimum 10 mm/sec Maximum 120mm/sec Default 30mm/sec Increments 1mm/sec steps</p>
Wet Clean Speed	<p>This parameter sets the speed of the screen clean wet wipe for optimization.</p> <p>Minimum 10 mm/sec Maximum 100mm/sec Increments 1mm/sec steps</p>
Vac Clean Speed	<p>This parameter sets the speed of the screen clean Vacuum for optimization.</p> <p>Minimum 10 mm/sec Maximum 100mm/sec Increments 1mm/sec steps</p>
Clean After Downtime	<p>This function provides the facility for the screen to be cleaned automatically with a pre-programmed clean after a pre-programmed idle time. Clean After Downtime only becomes active after the machine has performed at least one print after it is powered up. When selected this parameter opens a window that allows a clean after knead option sequence to be chosen. The sequence includes six stages, each of which may be one of the following cleaning operations: WET, DRY, VAC, NONE</p>
Clean After	<p>The Automatic screen clean after downtime process chosen in the above menu parameter is carried out after a countdown of the number of minutes set in this parameter.</p> <p>Minimum 5 mins. Maximum 120 mins. Increment 1 min.</p>
Clean After Knead	<p>This function is active if the machine is running in automatic mode. If this option is enabled and a paste dispense has been performed (either MANUAL or AUTOMATIC) a paste knead is performed as defined by the paste knead parameters in the board file on the next board immediately following the paste dispense. When selected this parameter opens a window that allows a clean after knead option sequence to be chosen. The sequence includes six stages, each of which may be one of the following cleaning operations: WET, DRY, VAC, NONE</p>
Front Start Offset (Blue/Silver USC)	<p>This parameter determines the distance from the front edge of the board that the cleaning stroke must start.</p> <p>Minimum 0mm Maximum 60mm Increments 1mm</p>
Front Start Offset (Vortex USC)	<p>The distance, in from the front edge of the board, at which the cleaner is to finish.</p> <p>Minimum -60mm Maximum 60mm Default 30mm Increment 1mm</p>
Rear Start Offset (Blue/Silver USC)	<p>This parameter determines the distance from the rear edge of the board that cleaning must complete.</p> <p>Minimum 0mm Maximum 60mm Increments 1mm</p>
Rear Start Offset (Vortex USC)	<p>The distance, in from the rear edge of the board, at which the cleaner is to start.</p> <p>Minimum -60mm Maximum 60mm Default 30mm Increment 1mm</p>

Parameter	Definition
Vortex Cassette Life (Vortex USC)	This parameter sets the number of cleaning strokes that are applied before a cleaning cassette is replaced. Minimum 0 Maximum 200 Default 20 Increment 1
Vortex Clean Rate (Vortex USC)	This parameter sets the frequency (in print cycles) at which screen cleaning occurs. Minimum 0 Maximum 200 Default 0 Increment 1
Vortex Solvent Rate (Vortex USC)	This parameter sets the frequency (in cleaning cycles) at which solvent is dispensed. Minimum 1 Maximum 10 Default 1 Increment 1
Vortex Vacuum Start (Vortex USC)	The distance, in from the front edge of the board, where vacuum is applied. Minimum Vacuum Stop Maximum Board Width Default 0mm Increment 1mm
Vortex Vacuum Stop (Vortex USC)	The distance, in from the front edge of the board, where vacuum application is stopped. Minimum -100mm Maximum Vacuum Stop Default 0mm Increment 1mm
Vortex Vacuum Rate (Vortex USC)	This parameter sets the frequency (in cleaning cycles) at which vacuum is applied. Minimum 1 Maximum 10 Default 1 Increment 1
Vortex Vacuum Period (Vortex USC)	This parameter sets the period for which vacuum is applied. Minimum 1 sec Maximum 10 secs Default 5 secs Increment 1 sec
Paste Dispense Rate	This parameter sets the number of print cycles which occur between cycling of the paste dispense system. Minimum 0 (Dispenser switched off) Maximum 100 Increment 1
Paste Dispense Speed	This parameter sets the speed at which the paste dispenser moves across the screen thereby determining the amount of paste deposited on the screen. Minimum 10mm/sec Maximum 100mm/sec Increment 1mm/sec

Parameter	Definition																								
Paste Start	<p>This parameter determines start position of the paste dispense measured from the centre line of the machine. The limits depend on the type of screen fitted.</p> <p>Minimum</p> <table> <tr><td>No adapter</td><td>-255mm</td></tr> <tr><td>255</td><td>-230mm</td></tr> <tr><td>Sanyo</td><td>-210mm</td></tr> <tr><td>Heraeus</td><td>-172mm</td></tr> <tr><td>249</td><td>-215mm</td></tr> <tr><td>Default</td><td>-half the board length</td></tr> </table> <p>Maximum</p> <table> <tr><td>No adapter</td><td>+255mm</td></tr> <tr><td>255</td><td>+230mm</td></tr> <tr><td>Sanyo</td><td>+210mm</td></tr> <tr><td>Heraeus</td><td>+172mm</td></tr> <tr><td>249</td><td>+215mm</td></tr> <tr><td>Default</td><td>+half the board length</td></tr> </table>	No adapter	-255mm	255	-230mm	Sanyo	-210mm	Heraeus	-172mm	249	-215mm	Default	-half the board length	No adapter	+255mm	255	+230mm	Sanyo	+210mm	Heraeus	+172mm	249	+215mm	Default	+half the board length
No adapter	-255mm																								
255	-230mm																								
Sanyo	-210mm																								
Heraeus	-172mm																								
249	-215mm																								
Default	-half the board length																								
No adapter	+255mm																								
255	+230mm																								
Sanyo	+210mm																								
Heraeus	+172mm																								
249	+215mm																								
Default	+half the board length																								
Paste stop	<p>This parameter determines the stop position of the paste dispense measured from the centre line of the machine. The maximum value depends on the type of screen fitted.</p> <p>Minimum</p> <table> <tr><td>No adapter</td><td>-255mm</td></tr> <tr><td>255</td><td>-230mm</td></tr> <tr><td>Sanyo</td><td>-210mm</td></tr> <tr><td>Heraeus</td><td>-172mm</td></tr> <tr><td>249</td><td>-215mm</td></tr> <tr><td>Default</td><td>-half the board length</td></tr> </table> <p>Maximum</p> <table> <tr><td>No adapter</td><td>+255mm</td></tr> <tr><td>255</td><td>+230mm</td></tr> <tr><td>Sanyo</td><td>+210mm</td></tr> <tr><td>Heraeus</td><td>+172mm</td></tr> <tr><td>249</td><td>+215mm</td></tr> <tr><td>Default</td><td>+half the board length</td></tr> </table>	No adapter	-255mm	255	-230mm	Sanyo	-210mm	Heraeus	-172mm	249	-215mm	Default	-half the board length	No adapter	+255mm	255	+230mm	Sanyo	+210mm	Heraeus	+172mm	249	+215mm	Default	+half the board length
No adapter	-255mm																								
255	-230mm																								
Sanyo	-210mm																								
Heraeus	-172mm																								
249	-215mm																								
Default	-half the board length																								
No adapter	+255mm																								
255	+230mm																								
Sanyo	+210mm																								
Heraeus	+172mm																								
249	+215mm																								
Default	+half the board length																								
Knead Boards	<p>This parameter sets the number of boards to be printed using the knead sequence.</p> <table> <tr><td>Minimum</td><td>1</td></tr> <tr><td>Maximum</td><td>10</td></tr> <tr><td>Increment</td><td>1</td></tr> </table>	Minimum	1	Maximum	10	Increment	1																		
Minimum	1																								
Maximum	10																								
Increment	1																								
Knead Deposits	<p>This parameter sets the number of print strokes to be carried out on each of the kneaded boards.</p> <table> <tr><td>Minimum</td><td>2</td></tr> <tr><td>Maximum</td><td>20</td></tr> <tr><td>Increment</td><td>1</td></tr> </table>	Minimum	2	Maximum	20	Increment	1																		
Minimum	2																								
Maximum	20																								
Increment	1																								
Paste Knead Period	<p>This parameter sets the time period between print cycles which, if exceeded, initiates a paste knead sequence.</p> <table> <tr><td>Minimum</td><td>0 (paste kneading switched off)</td></tr> <tr><td>Maximum</td><td>30 minutes</td></tr> <tr><td>Increment</td><td>1 minute</td></tr> </table>	Minimum	0 (paste kneading switched off)	Maximum	30 minutes	Increment	1 minute																		
Minimum	0 (paste kneading switched off)																								
Maximum	30 minutes																								
Increment	1 minute																								
Knead After Dispense	<p>If this option is enabled and a paste dispense has been performed (either Manual or Automatic) a paste knead is performed (as defined by the paste knead parameters in the board file) on the next board immediately following the paste dispense.</p> <p>ENABLED; DISABLED</p>																								
Paste While Clean	<p>This parameter enables the machine to carry out a paste dispense while cleaning the screen. Available modes are:</p> <p>DISABLED, MODE 1, MODE 2, BOTH MODES</p>																								
Alternate Disp	<p>This parameter gives the option to dispense at either ENDS or CENTRE. ENDS dispenses at the outer 25% of the squeegees. CENTRE dispenses along an area of 25% either side of the centre line.</p> <p>ENDS; CENTRE</p>																								

Parameter	Definition
Alternate Disp Rate	This parameter enables the user to select the ratio of alternate dispenses to standard dispenses. No alternate dispense Every dispense Every second dispense etc.
Paste With Board	This parameter gives the option to dispense paste with a board loaded and held at print height. This prevents paste dropping through the image on the screen. Options are: ENABLED; DISABLED <i>NOTE</i> <i>With enabled selected the parameter Paste While Clean is removed.</i>
Board Count	This function provides the facility for the print cycle to be halted automatically on a board count basis. If the board stop count is zero this function is not active. When a print run is started, a count is made from the STOP CYCLE AFTER value to zero decrementing by one for each board printed. When the counter reaches zero, the print cycle is finished and control returned to the main display page and the beacon is set to amber, thus indicating that the machine requires operator attention. The operator has access to all of the machines options. Once the operator has performed any required operations, the run button can be pressed to continue the print cycle. Minimum 0 Boards Maximum 500 Boards Increments 1 Board
Stop After Idle	This parameter when enabled sets the time the product is held in contact with the screen until both upline and downline systems are ready to transfer. Minimum 0 mins. Maximum 200 mins. Increments 1 min.
Screen X Forward	Nominal position of the X front screen actuator which ensures that corresponding screen and board fiducials can be viewed from a single camera position. Minimum -20mm Maximum +20mm Increment 0.004mm
Screen X Rear	Nominal position of the X rear screen actuator which ensures that corresponding screen and board fiducials can be viewed from a single camera position. Minimum -20mm Maximum +20mm Increment 0.004mm
Screen Y Axis	Nominal position of the Y screen actuator which ensures that corresponding screen and board fiducials can be viewed from a single camera position. Minimum -10mm Maximum +10mm Increment 0.004mm
Cleaner Paper Advance	The distance, measured in millimetres, by which the cleaner paper is advanced. Minimum 0 Maximum 200mm Increment 4mm
SPC Configuration	This preference allows the user to set up the Machines SPC operation. On selecting the SPC Configuration by pressing the Incr. or Decr. buttons, a window opens and the menu bar changes. See the SPC Configuration section later in this chapter for further details.
Paste Ridge Removal	This parameter enables the cleaning option Paste Ridge Removal. This option removes the ridge of the paste that can develop on the underside of the screen at the end of the under screen cleaner cleaning stroke. Disabled; Enabled. Default Disabled.

Parameter	Definition
Image Detail	This parameter allows the user to modify the screen image data of the selected screen library file. Once selected, pressing Incr. or Decr. Keys opens the Image Detail Configuration page. <i>NOTE</i> <i>This parameter is only displayed, if Screen Size in Set Preferences has been selected to Screen Library.</i>
Mesh Front	This parameter sets the distance between the inner edge of the screen frame and the screen glue line at the front of the frame. It defines the area that should not be contacted by the squeegees/ProFlow. Minimum 0mm Maximum Screen Length - 250mm Increment 0.1mm Default 38mm
Mesh Rear	This parameter sets the distance between the inner edge of the screen frame and the screen glue line at the rear of the frame. It defines the area that should not be contacted by the squeegees/ProFlow. Minimum 0mm Maximum Screen Length - 250mm Increment 0.1mm Default 38mm
Mesh Left	This parameter sets the distance between the inner edge of the screen frame and the screen glue line at the left of the frame. It defines the area that should not be contacted by the squeegees/ProFlow. Minimum 0mm Maximum Screen Width - 250mm Increment 0.1mm Default 38mm
Mesh Right	This parameter sets the distance between the inner edge of the screen frame and the screen glue line at the right of the frame. It defines the area that should not be contacted by the squeegees/ProFlow. Minimum 0mm Maximum Screen Width - 250mm Increment 0.1mm Default 38mm
Image X	This parameter defines the dimension in the X axis from the right inner edge of the screen frame to either: Right hand edge of the image - right justified image Left hand edge of the image - left justified image Centre line of the image - centre justified image Minimum 60mm Maximum Screen Width - 100mm Increment 0.1mm Default 330.4mm
Image Y	This parameter defines the dimension in the Y axis from the front inner edge of the screen frame to either: Front edge of the image - front justified image Rear edge of the image - rear justified image Centre line of the image - centre justified image. Minimum 60mm Maximum Screen Width - 100mm Increment 0.1mm Default 330.4mm
Image X Justification	This parameter defines the position of the image about the Image X parameter. The image can be left, right or centre justified about Image X. Options are: Left; Right; Centre. Default Centre

Parameter	Definition
Image Y Justification	This parameter defines the position of the image about the Image Y parameter. The image can be front, rear or centre justified about Image Y. Options are: Front; Rear; Centre. Default Centre
Barcode Y	This parameter defines the dimension between the centre of the barcode to the outer rear edge of the screen frame or adaptor. Minimum 10mm Maximum Screen Length - 10mm Increment 0.1mm Default 97mm
Front Knead Speed	This parameter sets the speed of kneading in the forward direction Minimum 2mm/sec Maximum 150mm/sec Increment 1mm/sec Default 10mm/sec
Rear Knead Speed	This parameter sets the speed of kneading in the rearward direction. Minimum 2mm/sec Maximum 150mm/sec Increment 1mm/sec Default 10mm/sec
Front Knead Pressure	This parameter sets the pressure to be applied, while using squeegees, when kneading in the forward direction. Minimum 0kg Maximum 20kg Increment 0.2kg Default 5kg
Rear Knead Pressure	This parameter sets the pressure to be applied, while using squeegees, when kneading in the rearward direction. Minimum 0kg Maximum 20kg Increment 0.2kg Default 5kg
ProFlow Knead Pressure	This parameter sets the pressure to be applied, while using ProFlow, when kneading in either direction. Minimum 0kg Maximum 20kg Increment 0.2kg Default 10kg
Paste Recovery Rate	This parameter sets the frequency, measured in print strokes completed in either direction, at which paste roll recovery occurs in both directions, when using squeegees. Minimum 0 (This disables paste roll recovery) Maximum 500 Increment 1 Default 1
Front Paste Recovery	This parameter sets the extent of paste roll recovery movement while beginning the rearward print stroke. The movement is measured forward from the print stroke start position. Minimum 0mm Maximum 15mm (Subject to the front turnaround envelope) Increment 1mm Default 5mm

SPC CONFIGURATION

When the cursor on the Edit Current Process Parameters page highlights the SPC Configuration option and **Incr.** or **Decr.** are pressed an SPC Configuration Window opens and two extra menu options become available:

Edit Outputs	Edit Limits		Next	Previous	Incr.	Decr.	Exit
--------------	-------------	--	------	----------	-------	-------	------

Configuration Window

The configuration window allows the user to setup the Machines SPC operation.

SPC Configuration Page.		
DATA OUTPUT RATE	EVERY CYCLE	
START RATE	1	cycles
SAMPLE RATE	10	cycles
START RATE LIMIT	10	cycles
SPC DATA MODE	SERIAL	
SPC FORMAT	WINDOWS	
UPDATE ON START-UP	NO	
ALIGN INSPECT MODE	PRE PRINT	

Data Output Rate

Two rates of data output are available as follows:

Every Cycle - Outputs SPC data every cycle except for the camera data, which is output dependant upon the settings of the parameters start rate, sample rate and start rate limit.

On Inspect - Outputs all SPC data at a rate dependant upon the settings of the parameters start rate, sample rate and start rate limit.

Start Rate

Sets the initial SPC output rate, for setting up a line. If start rate is set to 10, SPC data is output every 10 cycles until the start rate limit is reached, when the rate becomes that set in the sample rate parameter. The range is 1-100.

Sample Rate

Sets the rate of SPC output after the start rate limit has been reached. The range is 0-100, where 0 = use start rate until start rate limit is reached. If sample rate is set to 15, SPC data is output every 15 cycles after the start rate limit is reached.

Start Rate Limit

Sets the amount of SPC output cycles at the start rate. When this limit is reached the sample rate parameter becomes the active SPC output rate. The range is 0-100, where 0 = continuous SPC output at the start rate.

NOTE

Setting both start rate limit and sample rate to zero causes continuous SPC output at the start rate.

- SPC Data Mode Six modes of data transfer are available as follows:
- None - No SPC data is output at any time.
 - Remote - The data is written to a file called READINGS.DEK located on a remote network drive.
 - Serial - The data is output from the machines serial SPC port.
 - Disc - The data is written to a file called READINGS.DEK located on the machines local drive.
 - Serial + Remote - Outputs data in both modes.
 - Serial + Disc - Outputs data in both modes.
- SPC Format All data irrespective of SPC data mode is in the selected SPC format, options are: DOS or Windows.
- Update on Start-up The windows format contains the header data which has all the display information for the real time plots, including nominals, tolerances and control limits. The DOS format does not contain this header data. Two options are available as follows:
- Yes - Use if SPC format is set to DOS, header data is sent on start up.
 - No - Use if SPC format is set to windows.
- Align Inspect Mode Four modes of alignment inspection are available as follows:
- None - No fiducial alignment information is output at any time.
 - Pre Print - Board and screen fiducial alignment information is taken before the board is printed.
 - Post Print - Board and screen fiducial alignment information is taken after the board is printed.
 - Pre + Post Print - Board and screen fiducial alignment information is taken before and after the board is printed.
- The **Next** and **Previous** keys are used to move through the parameters.
- The **Incr.** and **Decr.** keys change the parameter values.
- Selecting the **Edit Outputs** key opens an SPC Output Parameters window and allows the user to decide which SPC parameters are output to the SPC data file READINGS.DEK (see the SPC Output Parameters section).
- The **Edit Limits** key opens an Edit SPC Limits window (see the Edit SPC Limits section), the window gives the operator the ability to set nominal, minimum and maximum limits for the various SPC parameters and define whether the machine stops when a limit is exceeded.

SPC Output Parameters

Pressing the **Edit Outputs** key while SPC Configuration Page is displayed opens the following window and menu bar:

SPC OUTPUT PARAMETERS	
X Alignment Deviation	YES
Y Alignment Deviation	YES
Theta Alignment Deviation	YES
Board Stretch	YES
Front Pressure	YES
Rear Pressure	YES
Separation Speed	YES
Temperature	YES
Relative Humidity	YES
Cycle Time	YES
Table Position	YES
Board Fiducial 1 Score	YES
Screen Fiducial 1 Score	YES
Board Fiducial 2 Score	YES
...more	

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

The **Next** and **Previous** keys move the cursor vertically through the parameter list.

The **Incr.** and **Decr.** keys switch the setting between YES and NO. If a parameter is set to YES it is output to the SPC data file (READINGS.DEK).

The **Exit** key returns to the previous menu.

The SPC Output parameters and their descriptions are listed in the table below:

Name	Description
X Alignment Deviation (mm)	The residual misalignment of board to stencil obtained by post print inspection. This data is obtained prior to releasing screen or board clamps.
Y Alignment Deviation (mm)	
Theta Alignment Deviation (arcsec.)	
Board Stretch (mm)	The calculated stretch of the board relative to the screen. Calculated from fiducial data obtained by post print inspection.
Front Pressure (kg)	Average front squeegee print pressure.
Rear Pressure (kg)	Average rear squeegee print pressure.
Separation Speed (mm/s)	Table separation speed.
Temperature (deg.C)	Temperature
Relative Humidity (%RH)	Relative humidity.
Cycle Time (sec.)	Time from receipt of board upline to release to downline, ie actual processing time and not line heartbeat.

Name	Description
Table Position (mm)	Values from the last print cycle. This value is the Set Print Height, which is stored in the machine configuration/calibration file, less the distance the table has travelled up to the print position.
Board Fiducial n Score	For the fiducial outputs nnn will refer to the target score and -mmm will be the accept score - target score.
Screen Fiducial n Score	
X Pre Alignment Deviation (mm)	The residual misalignment of board to stencil obtained by pre-print inspection. This data is obtained after screen clamping.
Y Pre Alignment Deviation (mm)	
Theta Pre Align Deviation (arcsec.)	
Pre Print Board Stretch (mm)	The calculated stretch of the board relative to the screen. Calculated from fiducial data obtained during pre-print inspection (obtained after screen clamping).
Pre Fid 1 X Align Deviation (mm)	Pre-print fiducial 1 X location error.
Post Fid 1 X Align Deviation (mm)	Post print fiducial 1 X location error.
Pre Fid 1 Y Align Deviation (mm)	Pre-print fiducial 1 Y location error.
Post Fid 1 Y Align Deviation (mm)	Post print fiducial 1 Y location error.
Pre Fid 2 X Align Deviation (mm)	Pre-print fiducial 2 X location error.
Post Fid 2 X Align Deviation (mm)	Post print fiducial 2 X location error.
Pre Fid 2 Y Align Deviation (mm)	Pre-print fiducial 2 Y location error.
Post Fid 2 Y Align Deviation (mm)	Post print fiducial 2 Y location error.
Pre Fid 3 X Align Deviation (mm)	Pre-print fiducial 3 X location error.
Post Fid 3 X Align Deviation (mm)	Post print fiducial 3 X location error.
Pre Fid 3 Y Align Deviation (mm)	Pre-print fiducial 3 Y location error.
Post Fid 3 Y Align Deviation (mm)	Post print fiducial 3 Y location error.
Front X Act Rel Movement (mm)	Front X actuator relative movement between current and last cycle.
Rear X Act Rel Movement (mm)	Rear X actuator relative movement between current and last cycle.
Act Y Rel Movement (mm)	Y actuator relative movement between current and last cycle.
Front X Act Position (mm)	Front X actuator absolute position.
Rear X Act Position (mm)	Rear X actuator absolute position.
Act Y Position (mm)	Y actuator absolute position.
PVP Result (%)	The paste volume prediction for a limit set.
Front Print Speed (mm/s)	The print carriage speed when printing to the front.
Rear Print Speed (mm/s)	The print carriage speed when printing to the rear.

Edit SPC Limits

Pressing the **Edit Limits** key when SPC Configuration Page is displayed opens the following window and menu bar:

Parameter	Stop On Limit	Maximum Limit	Minimum Limit	Nominal
X Alignment Deviation	NO	+0.025	-0.025	0.000
Y Alignment Deviation	NO	+0.025	-0.025	0.000
Theta Alignment Deviation	NO	+27	-27	0
Board Stretch	NO	+0.10	-0.10	0.00
Front Pressure	NO	+0.2	-0.2	0.0
Rear Pressure	NO	+0.2	-0.2	0.0
Separation Speed	NO	+2.00	-2.00	1.0
Temperature	NO	+5	-5	22
Relative Humidity	NO	+25	-25	50
Cycle Time	NO	+2.0	-2.0	30.0
Table Position	NO	+0.4	-0.4	0.000
Board Fiducial 1 Score	NO	+375	+100	700

...more

	Left	Right	Next	Previous	Incr.	Decr.	Exit
--	------	-------	------	----------	-------	-------	------

NOTE

The shaded parameters in the window are set by the machine.

Each parameter can be set to stop the machine if the limits are exceeded.

The **Left** and **Right** keys move the cursor across the parameter columns.

The **Next** and **Previous** keys move the cursor vertically through the parameter list.

The **Incr.** and **Decr.** keys increase or decrease the highlighted parameter.

The **Exit** key returns to the previous menu.

The SPC parameters and their edit limits are listed in the table below:

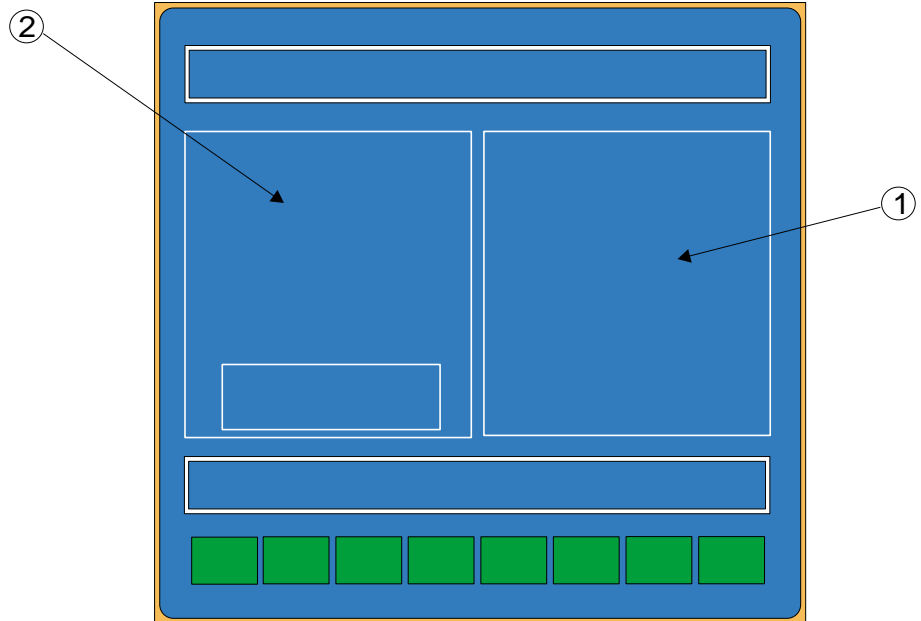
Parameter	Nominal	Default Tolerances	Increment Size	Tolerance Range
X Alignment Deviation	0	± 0.025mm	0.0005mm	± 1mm
Y Alignment Deviation	0	± 0.025mm	0.0005mm	± 1mm
Theta Alignment Deviation	0	± 31 arcsec	1 arcsec	± 100 arcsec
Board Stretch	0	± 0.1mm	0.01mm	± 1mm
Front Pressure	Product Parameter	± 0.2 kg	0.01 kg	± 2 kg
Rear Pressure	Product Parameter	± 0.2 kg	0.01 kg	± 2 kg
Separation Speed	Product Parameter	± 0.5mm	0.25mm	± 5mm
Temperature	22	± 5 degrees	1 degree	± 10 degrees
Relative Humidity	50	± 25 %	1 %	± 50 %

Parameter	Nominal	Default Tolerances	Increment Size	Tolerance Range
Cycle Time	30	± 2 seconds	0.1 seconds	± 10 seconds
Table Position	Product Parameter (print gap)	± 0.2mm	0.025mm	± 1mm
Board Fiducial 1 Score	700	+375, +100	10	± 500
Screen Fiducial 1 Score	700	+375, +100	10	± 500
Board Fiducial 2 Score	700	+375, +100	10	± 500
Screen Fiducial 2 Score	700	+375, +100	10	± 500
Board Fiducial 3 Score	700	+375, +100	10	± 500
Screen Fiducial 3 Score	700	+375, +100	10	± 500
X Pre Alignment Deviation	0	± 0.025mm	0.0005mm	± 1mm
Y Pre Alignment Deviation	0	± 0.025mm	0.0005mm	± 1mm
Theta Pre Alignment Deviation	0	± 27 arcsec	1 arcsec	± 100 arcsec
Pre Print Board stretch	0	± 0.1mm	0.01mm	± 1mm
Pre Fid 1 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 1 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Pre Fid 1 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 1 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Pre Fid 2 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 2 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Pre Fid 2 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 2 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Pre Fid 3 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 3 X Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Pre Fid 3 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Post Fid 3 Y Align Deviation	0	± 0.0625mm	0.0005mm	± 1mm
Front X Act Rel Movement	0	± 0.45mm	0.025mm	± 2mm
Rear X Act Rel Movement	0	± 0.85mm	0.025mm	± 2mm
Act Y Rel Movement	0	± 0.25	0.025mm	± 2mm
Front X Act Position	Front X Rough Align Value	± 0.45mm	0.025mm	± 9mm
Rear X Act Position	Rear X Rough Align Value	± 0.85mm	0.025mm	± 9mm
Act Y Position	Y Rough Align Value	± 0.25mm	0.025mm	± 9mm
PVP Result	80	± 20 %	5 %	± 50 %
Front Print Speed	Product Parameter	± 0.5mm	0.25mm	± 5mm
Rear Print Speed	Product Parameter	± 0.5mm	0.25mm	± 5mm

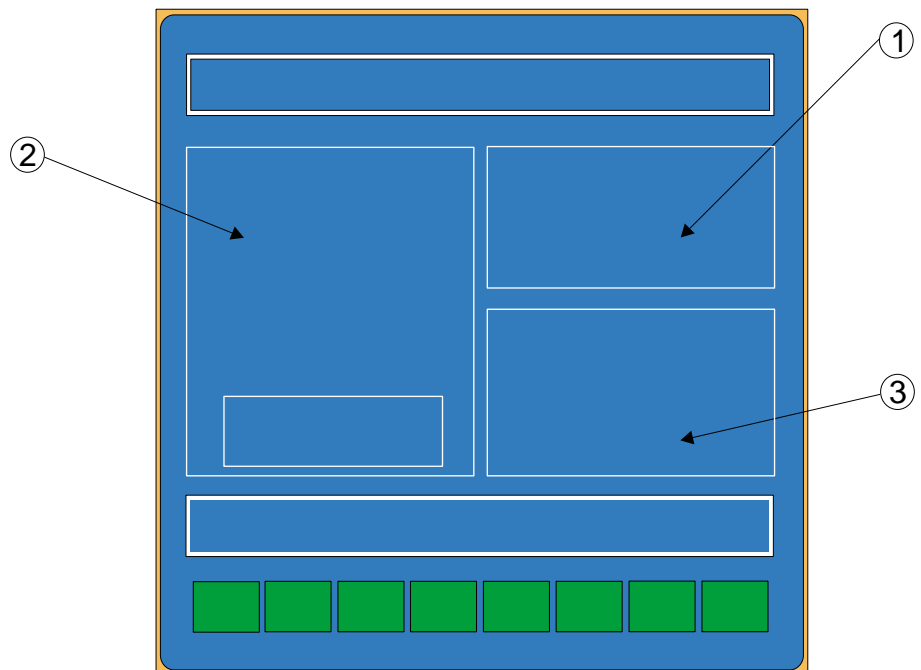
STATUS PAGE

The information displayed on the main control screen is shown on the status page. There are two versions of the status page, selectable in **Display Type** in **Set Prefs** menu.

Display Type 1



Display Type 2



Item	Description
1	Process - Parameters
2	Printer - Status
3	Rates

Information Windows Three information windows are displayed on the status page as follows:

- Printer - Status (on Display Types 1 and 2)
- Process - Parameters (on Display Types 1 and 2)
- Rates (on Display Type 2 only)

Printer - Status The following table lists all the items that can be displayed in the Printer - Status information panel:

Items	Description
Status	The printers current status is displayed. Options are: Maintenance; Operator Active; Ready; Machine Set Up.
Mode	Displays the current mode of operation of the printer. Options are: Step - The printer operates one step at a time; Auto - The printer operates continuously; Single - The printer prints a single board; No Print - The printer passes the board through the printer without printing.
Batch Count	Displays the amount of boards printed from the current batch. This is only shown on Display Type 1.
Batch Limit	Displays the total amount of boards to be printed in the current batch. This is only shown on Display Type 1.
Operator	Displays the name of the operator currently logged on to the printer.
Product	Displays the current product loaded onto the printer.
Data Logging	Displays whether data logging is selected. When selected, a pressure. dat file is created as the squeegee carries out a print stroke. This option is selected in Test Cycles in the Maint. menu.
Host Comms	Displays the condition of host communications. Options are: Disabled - Host Comms not selected; Enabled-No Comm - Host Comms selected, but not connected; Enabled-Comm - Host Comms selected and connected.
Temperature	Displays the current temperature within the printhead area. This is only displayed if a temperature and humidity sensor is fitted.
Humidity	Displays the current relative humidity within the printhead area. This is only displayed if a temperature and humidity sensor is fitted.
Cycle Time	The first figure displays the cycle time of the last board to be printed. The second figure displays the average cycle time of the batch. Cycle time is the time taken for the board to pass from the input sensor to the output sensor, not including delays, ie waiting for the downline machine.
Throughput	The first figure displays the throughput time of the last board to be printed. The second figure displays the amount of boards to be printed in an hour, based on the throughput times of the batch. Throughput is the time taken for the board to pass from the input sensor to the output sensor, including all delays.
SW Version	Displays the version of software currently loaded on the printer.

The Printer - Status panel can display up to a maximum of 14 items, (on both Display Types 1 and 2).

Process - Parameters The following table lists all the items that can be displayed in the Process - Parameters information panel:

Print Mode	Front Print Speed	Rear Print Speed	Front Pressure
Rear Pressure	ProFlow System Pressure	Print Gap	Separation Speed
Paste Dispense Rate	Clean Screen Rate 1.2	Forward X Offset	Forward Y Offset
Forward Theta Offset	Reverse X Offset	Reverse Y Offset	Reverse Theta Offset

The values of the Process - Parameters are set in the product file of the loaded product.

The panel can display up to a maximum of 14 items on Display Type 1 and 6 items on Display Type 2.

Rates The following table lists all the items that can be displayed in the Rates information panel:

Items	Description
Batch Count/Limit	The first figure displays the amount of boards printed in the current batch. The second figure displays the total amount of boards to be printed in the current batch. The batch count limit is set in Batch Limit in the Monitor menu.
Board Count/Limit	The first figure displays the amount of boards printed in the current board count. The second figure displays the total amount of boards to be printed in the current board count. The board count limit is set in Board Count in the Edit Data menu. The board count limit allows a separate board count to be set within the total batch count.
Paste Disp. Cnt/Rate	The first figure displays the amount of boards printed since the last paste dispense. The second figure displays the amount of boards to be printed between each paste dispense. The paste dispense count/rate is set in Paste Dispense Rate in the Edit Data menu.
Clean 1 Count/Rate	The first figure displays the amount of boards printed since the last screen clean mode 1 was carried out. The second figure displays the amount of boards to be printed between each screen clean mode 1. The clean 1 count/rate is set in Screen Clean Rate 1 in the Edit Data menu. This parameter is only displayed while a blue or silver under screen cleaner is fitted.
Clean 2 Count/Rate	The first figure displays the amount of boards printed since the last screen clean mode 2 was carried out. The second figure displays the amount of boards to be printed between each screen clean mode 2. The clean 2 count/rate is set in Screen Clean Rate 2 in the Edit Data menu. This parameter is only displayed while a blue or silver under screen cleaner is fitted.
Vortex Stroke/Limit	The first figure displays the amount of cleaning strokes carried out since the Vortex cleaning cassette was replaced. The second figure displays the total amount of cleaning strokes to be carried out before the cleaning cassette needs replacing. The Vortex stroke/limit is set in Vortex Cassette Life in the Edit Data menu. This parameter is only displayed while a Vortex under screen cleaner is fitted.
Clean Count/Rate	The first figure displays the amount of boards printed since the last Vortex screen clean was carried out. The second figure displays the amount of boards to be printed between each Vortex screen clean. The clean count/rate is set in Vortex Clean Rate in the Edit Data menu. This parameter is only displayed while a Vortex under screen cleaner is fitted.
Print Direction	Displays the print direction for the next board to be printed.

The Rates panel can display up to a maximum of 6 items and is only shown on Display Type 2.



265GSX
265Lt

CHAPTER 2

SET PREFERENCES

SET PREFERENCES

INTRODUCTION The Set Preferences function allows for the setting of preferred machine control options.

To access the set preferences window proceed as follows:

Select the **Maint.** button.

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	---------	---------------

Select the **Set Prefs** button.

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	------------------	----------	-------------	------

Selection of **Set Prefs** button displays a pop up window and changes the menu bar to display the following:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Next and **Previous** move the highlight between the parameter values. **Incr.** and **Decr.** alter the highlighted parameter value.

SET PREFERENCES MENU

DATA FILE LOCATIONS
TRANSPORT MODE
MACHINE UNITS
UPLINE PROTOCOL
DOWNLINE PROTOCOL
TRANSFER PERIOD
SELECTIVE PRINT/PASS
PASTE DISPENSE POSITION
COMMS PROTOCOL
EVENT RECORDING
TOOLING HARDWARE
AUTOFLEX ENTRY
FIDUCIAL REFERENCE
PRODUCT BARCODE H/W
SCREEN BARCODE H/W
REMOTE BARCODE HARDWARE
PFLOW CONTACT POS.
PFLOW DSTOP POS.
CHANGE MODE OPTION
SCREEN SIZE
FEATURE LICENSING
CONSUMABLE ACTION
2D INSPECTION
IMAGE RECORDING
UNDER SCREEN CLNR
PASTE TRAILS
TRANSPORT WAIT MODE
CLAMP TYPE
SNUGGER THICKNESS
TOOLING MONITORING
DISPLAY TYPE
FIDUCIAL MONITORING
FIDUCIAL SEARCH
REMOTE BOARD STOP
BOARD STOP X OFFSET
SPC PORT CONFIG
MACHINE LOCATION
MAINT. MONITORING
VACUUM HOLD TIME

PREFERENCES

Data File Locations Allows the user to create individual directories for product and data files. Once created the individual directories become the current locations for all future product and data files.

Before changing the product and data file locations, use the copy data function in House Keeping, to copy any existing product and data files to floppy disk. After changing the product and data file locations, use the copy data function in House Keeping, to copy any existing product and data files from the floppy disk to the new directories.

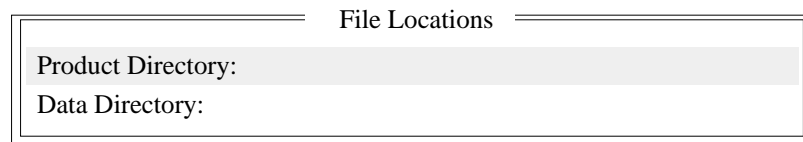
NOTE

When Load Data is selected from the setup menu only the files in the current location are displayed.

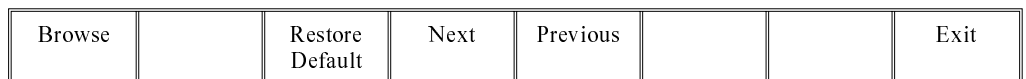
The default location is:

D:\Program Files\DEK\MachineControl\Printer

Selecting the **Incr.** or **Decr.** key with data file locations highlighted opens the following window:



The menu bar changes to the following:



NOTE

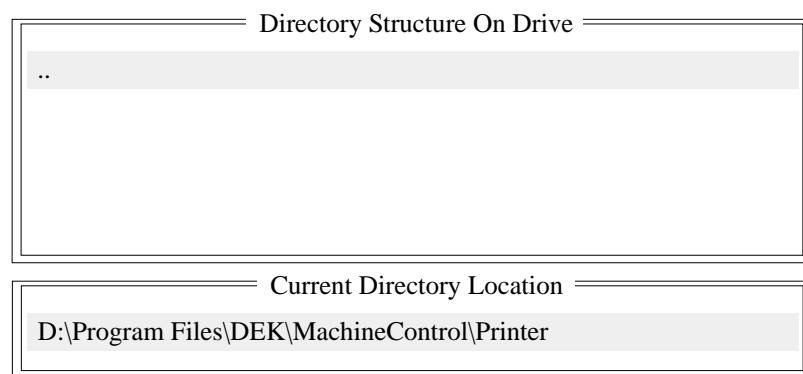
Restore default is only available while the highlighted directory is not already at the default location.

Use the **Next** and **Previous** keys to move between the different directories.

Use the **Exit** key to close the File Locations window.

Use the **Restore Default** key to change the path, for files associated with the highlighted directory, from the current location to the default location.

Selecting the **Browse** key opens the following window:



The menu bar changes to the following:

Select		Create Directory	Left	Right	Up	Down	Exit
--------	--	------------------	------	-------	----	------	------

The message ‘**Select a directory to become the current location for Process Program files.**’ is displayed in the message bar.

Use the **Up** and **Down** keys to scroll up and down the highlighted column.

Use the **Left** and **Right** keys to move between columns.

Use the **Exit** key to close the Directory Structure On Drive window.

Selecting the **Create Directory** key opens the following window:

Create Directory

New Name:

The menu bar changes to the following:

Proceed							Cancel
---------	--	--	--	--	--	--	--------

Use the keyboard to type the name of the new directory.

Select the **Proceed** key, a new directory is created providing:

- The string entered constitutes a valid name for a directory.
- A file or directory of that name does not already exist.
- The current directory is accessible for writing.

Transport Mode

Sets the input and output side of the printer, options are:
Left to Right; Right to Left; Right to Right, Left to Left, No Transfer.
The default is Left to Right.

Machine Units

Sets the unit of measurement, options are:
Metric; Imperial units.
The default is Metric.

Upline Protocol

Sets the protocol for transferring boards from adjacent machines, options are:
NO FMI; SANYO; SANYO FLOWOUT; SMPI; SMEMA; FUJI; DYNA (Dynapert); SIEMENS; PANASONIC; TDK; MANUAL; SMEMA2
The default is specified by customers requirements.

- Downline Protocol** Sets the protocol for transferring boards to adjacent machines, options are:
NO FMI; SANYO; SANYO FLOWOUT; SMPI; SMEMA; FUJI; DYNA (Dynapert); SIEMENS; PANASONIC; TDK; MANUAL; SMEMA2
The default is specified by customers requirements.
- Transfer Period** Sets a programmable time period used by certain transfer protocols, options are:
Min 0 sec
Max 99 sec
Increments 1 sec
The default is 20 seconds.
Period of Transfer Time - This is the period of time which the machine allows for a transfer of a board before displaying a 'Board Transfer Error' for upline or downline.
Period of Waiting Time - This is the period of time which the machine allows when waiting for the upline or downline machine to request a board for transfer before displaying a message of 'Waiting for Upline/Downline'.
- Selective Print/Pass** Sets whether the facility to selective print or pass through a board is to be used, options are:
Enabled; Disabled
The default is Disabled
This feature is protected by Feature Licence Authentication.
When enabled the identity of the incoming board is checked using a separate fiducial on the board only, called a Select Mark. If the identity of the board matches the current product file the board is printed. If the board is different or cannot be recognized, it is passed through without printing.
- Paste Dispense Position** Sets the position from which paste is dispensed, in relation to the screen image, options are:
Front; Rear; Auto
The default is Auto.
When exiting Set Preferences after setting option to either Rear or Auto the following window is displayed:

Paste Dispense Position

Please confirm that there will be no obstruction when your paste dispenser dispenses paste at the rear of the image

Comms Protocol Sets the communications protocol to be used for serial communications to a host computer, options are:

Secs; GEM; Net_file; No Comms

The menu bar changes depending on the option chosen, see the Host Communications Chapter for further details.

NOTE

Host Comms is available for the 265GSX only.

CAUTION

Do not select SECS Protocol without having the SECS II Interface fitted to the Machine. If this is inadvertently selected, call DEK Service Dept. for advice.



WARNING

SAFETY DEVICES. THE SAFETY FEATURES DESIGNED IN TO THE MACHINE ARE FOR THE PROTECTION OF ALL OPERATOR AND MAINTENANCE PERSONNEL. DEK STRONGLY RECOMMEND SAFETY DEVICES ARE NEVER OVERRIDDEN.

Event Recording Sets which events are recorded in the event log file, options are:

Custom; Group 3; Group 2; Group 1

The default is Custom.

Over 200 possible events may be recorded using the event logging set preference.

On selecting Custom in the Event Recording set preference the following set up window opens:

Event Report Setting:	Disk	Host	Grp
System Power On	on	off	1
System Power Down	on	off	1
Pneumatic Power Down	on	off	2
Front Squeegee Error	on	off	3
Rear Squeegee Error	on	off	2
Rising Table Error	on	off	2
Rising Table Error	on	off	1
Print Carriage Error	on	off	1
Paste Carriage Error	on	off	1
Camera X Axis Error	on	off	1
Camera Y Axis Error	on	off	3
Camera Y Axis Error	on	off	3
Rail Width Error	on	off	3
Screen XF Error	on	off	1
Screen XR Error	on	off	1

...more

The window displays how each event is logged in the three possible ways; Disk, Host and Grp.

Disk This column lists which events are logged to the disk file. The events set to ‘on’ are logged, those set to ‘off’ are not logged.

Host This column lists which events are sent to the host computer. The option is only active if a GEM host comms interface is fitted. The events set to ‘on’ are logged, those set to ‘off’ are not. How the host computer deals with the event logging, depends on the host software and is not controlled by the 265 machine.

Grp This parameter allows the user to assign events to one of three groups. The user can select from the Event Logging set preference which of the groups are to be recorded, as follows:

Set Preference Selection	Event Groups Recorded
Group 1	Groups 1, 2 and 3 (all events)
Group 2	Groups 2 and 3
Group 3	Group 3

Setting Up Events The Event Recording menu is laid out as follows:

Toggle	Left	Right	Next	Previous	Incr.	Decr.	Exit
--------	------	-------	------	----------	-------	-------	------

Use the **Next** and **Previous** keys to move to the event to be changed.

Use the **Toggle** key to toggle the Disk and Host parameters between on and off.

Use the **Left** and **Right** keys to move to the Disk, Host or Grp columns.

Use the **Incr.** and **Decr.** keys to change the value of the Grp parameter.

Use **Exit** to leave the Event Recording window.

Recordable Events The following table shows the events that can be selected for recording:

System Power On	System Power Down	Humidity
Temperature	Batch Count	Measured Cycle Time
Throughput Cycle Time	Front Print Pressure	Rear Print Pressure
Table Separation Speed	Stretch Error	X Error
Y Error	Theta Error	Board Fid 1 Score
Board Fid 2 Score	Board Fid 3 Score	Screen Fid 1 Score
Screen Fid 2 Score	Screen Fid 3 Score	ProFlow System Pressure
Pneumatic Power Down	Front Squeegee Error	Rear Squeegee Error
Rising Table Error	Print Carriage Error	Paste Carriage Error
Camera X Axis Error	Camera Y Axis Error	Rail Width Error
Screen XF error	Screen XR Error	Screen Y Error
Paste Cartridge Tilt Error	Screen Changer Drive Error	Board Stop Stuck

**SET PREFERENCES
PREFERENCES**



Board Clamp Stuck	Board Stuck In Rails	Unable To Find Fiducial
Rail Lifted Error	Pressure Error	File Error
Unable To Recover	Recovery Started	Recovered
Upline Transfer Error	Downline Transfer Error	Dual Shuttle Fault
Screen Elevator Comms Fault	Screen Elevator Fault	Screen Changer Fault
Lid Bolt Fault	Alignment Out Of Range	Line Power On
Line Power Off	Cover Open	Cover Closed
Printer Ready	Head Raised	Head Closed
Paste Dispensing	Paste Cartridge Empty	Cycle Aborted
Cycle Completed	Cleaning Screen	Parameter Adjusted
Setup Started	Product Loaded	New Product
Product Data Changed	Screen Unloaded	Screen Loaded
Tool Change Started	Tool Change Complete	Setup Ended
Start Print Cycle	Board Received	End Print Cycle
Printed Board Ready	Board Printed	Operator Log On
Operator Log Off	Clear Batch Count	Start Maintenance
End Maintenance	Pressure Recalibrated	Offset Recalibrated
XY Scale Recalibrated	Theta Recalibrated	Configuration Changed
Start Diagnostics	End Diagnostics	Flood Height Reset
Camera Ref Reset	Thickness Recalibrated	Vision Height Reset
Print Height Reset	Autoflex Status Reset	Software Updated
New Event Log	Front Reference Position Reset	Front Reference Height Reset
Rear Reference Height Reset	Check Cleaner Paper	Cleaner Solvent Low
Barcode Read Failure	Barcode Mismatch	Screen Couplings Not Extended
Mint Reply Timeout	Camera X Failed To Position	Camera Y Failed To Position
Aperture Blockage	Stencil Smear	Paste Present
Bridging alarm	Alignment Alarm	Head Left Partly Open
Head Moved To Safe State	Inspection Cycle Complete	Clock Change Request
Clock Changed	Board Delivered and Removed	Event Log Disc File Full
ProFlow Error	Autoflex Tooling Selected	Autoflex Tooling Deselected
AutoFlex Tooling Enabled	AutoFlex Tooling Disabled	Tooling Data Has Been Changed
CAN Node Comms Lost. Node	CAN Node Comms Active. Node	CAN Bus Comms Lost. Bus
CAN Bus Comms Active. Bus	Invalid CAN Response	Product Directory Request
Current Product Request	Erase Product Request	Rename Product Request
Load Product Request	Download Product Request	Upload Product Request
Download Configuration Request	Upload Configuration Request	Upload Management Data Request
Clear Batch Data Request	Clear Session Data Request	Upload Event Log Request
Clear Event Log Request	Comms Start Request	Comms Stop Request
Update Mode Request	Comms Error	Parameter Info Uploaded
Formatted Parameters Uploaded	Formatted Parameters Downloaded	Comms Status Request
Comms Rebuild Product List	Comms Adjust Paste Rate	Comms Adjust Front Pressure
Comms Adjust Rear Pressure	Comms Adjust Print Gap	Comms Adjust Separation Speed
Comms Adjust Clean Screen	Comms Adjust FWD_X Offset	Comms Adjust FWD_Y Offset
Comms Adjust FWD_T Offset	Comms Adjust REV_X Offset	Comms Adjust REV_Y Offset
Comms Adjust REV_T Offset	Comms Dispense Paste Request	Comms Clean Screen Request

Comms Enabled	Comms Disabled	Equipment Constant Change
Acknowledge Terminal Message	Comms Knead Paste Request	Comms Condition Paste Request
Control State Change To Local	Control State change To Offline	Control State Change To Remote
GEM Spooling Activated	Gem Spooling Deactivated	GEM Spool Transmission Failure
Operator Command Issued	Remote Barcode Received	Comms Adjust ProFlow Pressure
Options.enb file Attribute Error	Volume Alarm	Evaluation Dongle Detected
Valid Dongle Detected	Dongle Error	Dongle Changed
Print Speed	Front Print Speed	Rear Print Speed
Comms Adjust Print Speed	Comms Adjust Front Print Speed	Comms Adjust Rear Print Speed
Vortex Cassette Replaced	Maintenance Monitoring Initialis	The Monthly Service is Due
The Six Monthly Service is Due	The Yearly Service is Due	Equipment Recovery
Equipment Setup	Equipment Ready	Equipment Maintenance
Equipment Waiting	Equipment Running	Equipment Down

Tooling Hardware Sets which type of tooling is fitted, options are:
Autoflex; Vacuum; Magnetic; Vac For Flex
The default is Magnetic.

Autoflex Entry Sets whether the Fine Pitch Autoflex pin co-ordinates are referenced by the distance of the pin, in X and Y, from the front left of the Autoflex table (absolute), or from the column letters and row numbers (grid), options are:
Absolute; Grid

Fiducial Reference Sets whether the fiducial co-ordinates are specified relative to the front/left or front/right corner of the board:
Left; Right
The default is Left.

Product Barcode H/W Sets whether or not the product barcode reader is fitted (265GSX only), options are:
Fitted; Not Fitted

Screen Barcode H/W Sets whether or not the screen barcode reader is fitted (265GSX only), options are:
Fitted; Not Fitted

Remote Barcode Hardware	<p>This preference is only available if the TCP/IP version of Host Comms is used and Serial Host Comms is not selected from the Comms Protocol set preference, options are:</p> <p>Enabled; Disabled</p> <p>The optional External Product Barcode Reader provides a generic bar code interface for the capturing by GEM and SPC of a product bar code before the product is passed to the printer. Use of the reader enables a host program to decide on the action to be taken for this product and provides a method for SPC to log product details for tracking.</p> <p>The DEK printer acts as a dumb receiver of barcode data and provides no set up, configuration or triggering information for the barcode reader.</p>
Compatible Bar Code Reader	<p>The printer has been designed to operate with SICK Model CLV 212 Bar code reader.</p>
Options	<p>The two options available for the External Barcode parameter are Enabled and Disabled.</p> <p>If the bar code reader is set to Disabled, COM 1 is setup as per previous versions of software and enabled to accept serial host comms.</p> <p>If the bar code reader is set to Enabled, COM 1 is set to use the external bar code reader and the option Serial Comms is removed from the Comms Protocol parameter in the Set Preferences menu.</p>
ProFlow Contact Position	<p>This parameter sets the height of the ProFlow printhead so that it just touches the stencil surface.</p> <p>Min - 10mm</p> <p>Max + 10mm</p> <p>Increments 0.1mm</p> <p>The default is 0mm.</p>
ProFlow Down Stop Position	<p>This parameter pre-tensions the squeegee suspension springs to provide ProFlow with a zero pressure datum.</p> <p>Min - 10mm</p> <p>Max 10mm</p> <p>Increments 0.1mm</p> <p>The default is 0mm.</p>

Change Mode Option

Sets the screen change mode, options are:

Manual; Dual Shuttle

NOTE

The dual shuttle option is only relevant on a machine with a dual shuttle unit fitted.

Screen Size

Sets the screen size frame:

265; FUJI; 249; SANYO; SCREEN LIBRARY

With Screen Library enabled the printer is provided with detailed screen dimensional information from a 'read only' library. This information is stored within the machine configuration and product files.

Once selected in Set Preferences, detailed frame dimensions are provided to the printer. In Edit Current Process Parameters, the parameter Image Data provides comprehensive location and mesh details to the printer.

To enable screen library files carry out the following:

1. Highlight **Screen Size** in the Set Prefs page.
2. Using **Incr.** or **Decr.** select **Screen Library**.
Edit Data is now available on the menu bar.
3. Select **Edit Data**, the following window and menu bar is displayed:

Screen Frame Configuration		
SCREEN TYPE	DEK 265 CENTRAL IMAGE	
SCREEN LENGTH	XXX	mm
SCREEN WIDTH	XXX	mm
FRAME FRONT	XXX	mm
FRAME REAR	XXX	mm
FRAME LEFT	XXX	mm
FRAME RIGHT	XXX	mm

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Use **Incr.** or **Decr.** to select the required Screen Type. If no valid screen library files are found, the default file DEK 265 Central Image is displayed.

Use **Next** or **Previous** to select and **Incr.** or **Decr.** to modify the screen frame parameters as required.

The screen library menu parameters are defined in the table below:

Parameter	Definition
Screen Record ID	The identity of the screen type library record containing a text string that matches the Screen Type selected. Format Maximum 32 character text string Default DEK 265 Central Image
Screen Length	This parameter sets overall dimension front to rear of the screen frame or adaptor. Minimum 550mm Maximum 860mm Increment 0.1mm Default 736.6mm
Screen Width	This parameter sets the overall dimension left to right of the screen frame or adaptor. Minimum 580mm Maximum 736.6mm Increment 0.1mm Default 736.6mm
Frame Front	This parameter sets the distance between the outer edge of the screen frame or adaptor and the inner edge of the frame, at the front of the frame. Minimum 20mm Maximum Screen Length - 250mm Increment 0.1 Default 38.1mm
Frame Rear	This parameter sets the distance between the outer edge of the screen frame or adaptor and the inner edge of the frame, at the rear of the frame. Minimum 20mm Maximum Screen Length - 250mm Increment 0.1mm Default 38.1mm
Frame Left	This parameter sets the distance between the outer edge of the screen frame or adaptor and the inner edge of the frame, at the left of the frame. Minimum 20mm Maximum Screen Length - 250mm Increment 0.1mm Default 38.1mm
Frame Right	This parameter sets the distance between the outer edge of the screen frame or adaptor and the inner edge of the frame, at the right of the frame. Minimum 20mm Maximum Screen Length - 250mm Increment 0.1mm Default 38.1mm

Feature Licensing Sets whether the Feature Licensing facility is fitted to the machine.
Enabled; Disabled

Introduction The Feature Licensing facility enables a user to request and install a licence to run a new feature on the machine. The Features Licensed window lists all the licences available and applicable to the machine and current software.

Licence Request 1. Select **Maint.** (F8).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	---------	---------------

2. Select **Set Prefs** (F5).

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	------------------	----------	-------------	------

The following window is displayed:

Set Preferences	
TRANSPORT MODE	LEFT TO RIGHT
MACHINE UNITS	METRIC
UPLINE PROTOCOL	NO FMI
DOWNLINE PROTOCOL	NO FMI
TRANSFER PERIOD	60 secs
PASTE DISPENSE POS	FRONT
EVENT RECORDING	CUSTOM
TOOLING HARDWARE	MAGNETIC
FIDUCIAL REFERENCE	LEFT
REMOTE BARCODE H/W	NOT FITTED
CHANGE MODE OPTION	MANUAL
SCREEN SIZE	265
PAPER/SOLV/PASTE LOW	WARN
FEATURE LICENSING	ENABLED
. . more	

3. Using **Next** and **Previous** (F4 -F5) highlight Feature Licensing.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	-------	-------	------

4. Select **Edit Features** (F1).

Edit Features			Next	Previous			Exit
----------------------	--	--	------	----------	--	--	------

The following window and menu bar is displayed:

Features Licensed by 112737	
Basic Screen Insp.	DISABLED
Basic Board Insp.	DISABLED
Advanced Screen Insp.	DISABLED
Advanced Board Insp.	DISABLED
SEC GEM Option	DISABLED
Net Files Option	DISABLED
Flexi Print	DISABLED
Selective Prnt Pass	DISABLED
Tooling Monitoring	DISABLED

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	------------------	------

5. Select **Customer Info** (F1).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
----------------------	----------------	------------------	------	----------	---------------	------------------	------

The following window and menu bar is displayed:

Customers Own Information	
Company Name	DEK Printing Machines Ltd
Cust. Order Number	ABC01-21/10/99
Contact Name	George Smith
Phone Number	01305 760760
Fax Number	01305 760123
Email Address	gsmith@dek.com

	Edit Data	Save Data	Next	Previous			Exit
--	-----------	-----------	------	----------	--	--	------

6. Using **Next** and **Previous** (F4 - F5) highlight the required field.

	Edit Data	Save Data	Next	Previous			Exit
--	-----------	-----------	-------------	-----------------	--	--	------

7. Select **Edit Data** (F2).

	Edit Data	Save Data	Next	Previous			Exit
--	------------------	-----------	------	----------	--	--	------

8. Using the keyboard input the required information. On completion of editing a field, press **Enter** on the keyboard.

9. Repeat Steps 6 - 8 for the remaining fields.

10. On completion of editing fields, select **Save Data** (F3).

	Edit Data	Save Data	Next	Previous			Exit
--	-----------	------------------	------	----------	--	--	------

The message '**Printer configuration data file saved**' is displayed. The information is written to a 'customer.txt' file and attached to all licence request files, the window is closed.

11. Select **Next** and **Previous** (F4 - F5) to highlight the feature to be requested.

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	-------------	-----------------	---------------	------------------	------

12. Select **Request Features** (F3).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	-------------------------	------	----------	---------------	------------------	------

The following window and menu bar is displayed:

<p>License Acquisition</p> <p>Do you want to obtain a license to use:</p> <p>Basic Screen Insp.</p> <p>On Dongle :</p> <p>112737</p>
--

Yes							No
-----	--	--	--	--	--	--	----

13. Select **Yes** (F1).

Yes							No
------------	--	--	--	--	--	--	----

The following window and menu bar is displayed:

<p>Feature License Request</p> <p>Request File Path A:\ GS1</p> <p>Request File Name request8.txt</p> <p>A request to license the feature you have selected will be written or appended to the above file in the above directory path.</p>
--

Continue	Edit Data		Next	Previous			Exit
----------	-----------	--	------	----------	--	--	------

14. Using **Next** and **Previous** (F4 -F5) highlight the required field.

Continue	Edit Data		Next	Previous			Exit
----------	-----------	--	-------------	-----------------	--	--	------

15. Select **Edit Data** (F2).

Continue	Edit Data		Next	Previous			Exit
----------	------------------	--	------	----------	--	--	------

16. Using the keyboard input the required information. On completion of editing the field, press **Enter** on the keyboard.

17. Repeat Steps 14 -16 for the remaining field.

18. Select **Continue** (F1).

Continue	Edit Data		Next	Previous			Exit
-----------------	-----------	--	------	----------	--	--	------

19. Select **Exit** (F8).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	------------------	-------------

20. Select **Exit** (F8).

Edit Features			Next	Previous			Exit
---------------	--	--	------	----------	--	--	-------------

21. Select **Exit** (F8).

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	-----------	----------	-------------	-------------

22. The licence request.txt file can now be forwarded to your local DEK agent for processing.

Licence Installation 1. Select **Maint.** (F8).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	---------	---------------

2. Select **Set Prefs** (F5).

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	------------------	----------	-------------	------

The following window is displayed:

Set Preferences	
TRANSPORT MODE	LEFT TO RIGHT
MACHINE UNITS	METRIC
UPLINE PROTOCOL	NO FMI
DOWNLINE PROTOCOL	NO FMI
TRANSFER PERIOD	60 secs
PASTE DISPENSE POS	FRONT
EVENT RECORDING	CUSTOM
TOOLING HARDWARE	MAGNETIC
FIDUCIAL REFERENCE	LEFT
REMOTE BARCODE H/W	NOT FITTED
CHANGE MODE OPTION	MANUAL
SCREEN SIZE	265
PAPER/SOLV/PASTE LOW	WARN
FEATURE LICENSING	ENABLED
. . more	

3. Using **Next** and **Previous** (F4 -F5) highlight Feature Licensing.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	-------	-------	------

The following menu bar is displayed:

Edit Features			Next	Previous			Exit
---------------	--	--	------	----------	--	--	------

4. Select **Edit Features** (F1).

Edit Features			Next	Previous			Exit
----------------------	--	--	------	----------	--	--	------

The following window and menu bar is displayed:

Features Licensed by 112737	
Basic Screen Insp.	DISABLED
Basic Board Insp.	DISABLED
Advanced Screen Insp.	DISABLED
Advanced Board Insp.	DISABLED
SEC GEM Option	DISABLED
Net Files Option	DISABLED
Flexi Print	DISABLED
Selective Prnt Pass	DISABLED
Tooling Monitoring	DISABLED

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	------------------	------

5. Select **Install Features** (F7).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	-------------------------	------

The following window and menu bar is displayed:

Feature License Installation on 112737	
Install File Path	A:\GS1
Install File Name	install8.txt
Please set the values of the fields above to specify the file that contains the Feature License Installation Instructions	
If no filename is set, or if Manual Entry is selected, it will be assumed that the installation Instructions are to be entered on the keyboard.	

Continue	Edit Data	Manual Entry	Next	Previous			Exit
----------	-----------	--------------	------	----------	--	--	------

NOTE

Carry out Steps 6 - 12 if the input of the licence is via file.

Carry out Steps 13 - 21 if the input of the licence is via the keyboard.

6. Select **Next** and **Previous** (F4 -F5) to highlight the required field.

Continue	Edit Data	Manual Entry	Next	Previous			Exit
----------	-----------	--------------	-------------	-----------------	--	--	------

7. Select **Edit Data** (F2).

Continue	Edit Data	Manual Entry	Next	Previous			Exit
----------	------------------	--------------	------	----------	--	--	------

8. Using the keyboard enter the required information into the highlighted field. On completion, select **Enter** on the keyboard.

9. Select **Continue** (F1).

Continue	Edit Data	Manual Entry	Next	Previous			Exit
-----------------	-----------	--------------	------	----------	--	--	------

NOTE

If the installation is successful the feature appears in the Features Licensed window.

10. Select **Exit** (F8).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	------------------	-------------

11. Select **Exit** (F8).

Edit Features			Next	Previous			Exit
---------------	--	--	------	----------	--	--	-------------

12. Select **Exit** (F8).

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	-----------	----------	-------------	-------------

13. Select **Manual Entry** (F3).

Continue	Edit Data	Manual Entry	Next	Previous			Exit
----------	-----------	---------------------	------	----------	--	--	------

The following window and menu bar is displayed:

Enter License Installation Instructions							
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
Please enter the 8 Licensing Instructions EXACTLY as they are written as 8 groups of 8 characters each.							

Continue	Edit Data		Next	Previous			Exit
----------	-----------	--	------	----------	--	--	------

14. Select **Edit Data** (F2).

Continue	Edit Data		Next	Previous			Exit
----------	------------------	--	------	----------	--	--	------

15. Using the keyboard, carefully enter the first group of 8 alphanumeric characters and select **Enter** on the keyboard.

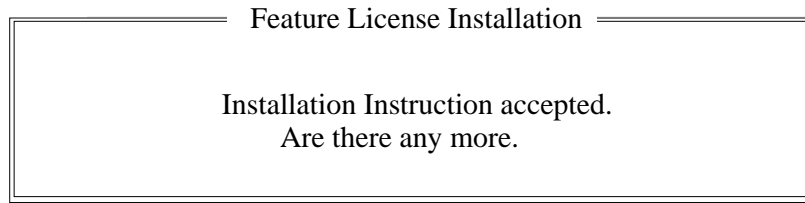
16. Select **Next** (F4) to enter the next group of alphanumeric characters in the installation instructions.

17. Repeat Steps 14 - 16 for the remaining groups of alphanumeric characters.

18. Select **Continue** (F1).

Continue	Edit Data		Next	Previous			Exit
-----------------	-----------	--	------	----------	--	--	------

The following window and menu bar is displayed:



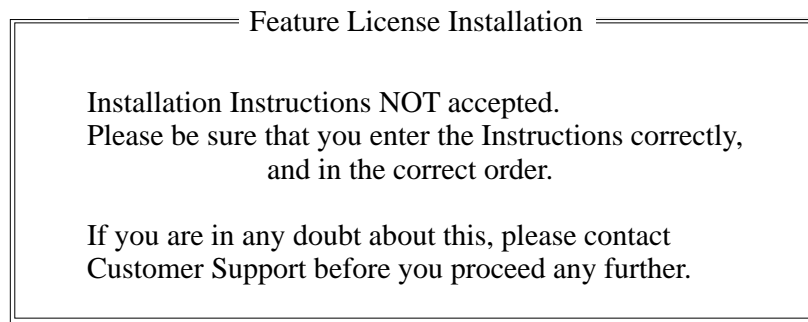
Yes							No
-----	--	--	--	--	--	--	----

19. Select **Exit** (F8).

Customer Info	Print Features	Request Features	Next	Previous	Print Request	Install Features	Exit
---------------	----------------	------------------	------	----------	---------------	------------------	-------------

NOTE

If the installation is not successful the following window and menu bar is displayed:



Continue							Abort
----------	--	--	--	--	--	--	-------

NOTE

Continue - returns to Enter License Installation Instructions window.

Abort - returns to Feature Licensed window.

20. Select **Exit** (F8).

Edit Features			Next	Previous			Exit
---------------	--	--	------	----------	--	--	-------------

21. Select **Exit** (F8).

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	-----------	----------	-------------	-------------

Consumable Action Sets how the machine reacts to a cleaner paper low, cleaner solvent low, print medium low or Vortex cleaning cassette expired, options are:

Warn; Pause; Suspend

Warn - A warning window is displayed, but printing proceeds without interruption. The tricoloured beacon shows amber/green.

Pause - A pause on warning window is displayed and printing is delayed to enable the user to either; replenish the consumable resource, or defer the replenishment until later and continue printing. The tricoloured beacon shows red.

Suspend - A suspend on warning window is displayed and printing is suspended and remains suspended, until the consumable resource has been replenished. The tricoloured beacon shows red. Before printing commences the consumable resources are checked for availability, before allowing the print run to proceed.

2D Inspection Sets whether the 2D inspection facility is to be used, options are:

Enabled; Disabled

The default is Disabled.

Image Recording Sets whether video images can be recorded, options are:

Off; PC Disk; VP Disk

The default is Off.

PCdisk requires the PC to have 8Mb ram & VPdisk requires a SCSI disk to be attached to the VP.

Under Screen Cleaner Sets whether or not the vacuum option is fitted to the machine, options are:

Vacuum; Standard

The default is Standard.

If standard is selected the vacuum options are removed from the screen clean mode parameters. If the Vortex under screen cleaner is fitted, vacuum is the only option.

To enable the blue under screen cleaner carry out the following:

1. Press the function key **F10** on the keyboard, a window of the following form is displayed:

DEK 265 GS (X)	
Serial Number	: 201305
Processor Type	: 486DX - or higher
Executable date	: April 19 1999
Executable time	: 10:57:38
Executable name	: RR0400.EXE
Software Version	: 04.00
Options Enabled	: S B N G
Comms Driver	: TCP
DOS Memory	: 512 kb
Free DOS Memory	: 316 kb
Available RAM	: 3223 kb

Enter to Close ...

NOTE

If the Vortex under screen cleaner is currently enabled, carry out disabling the Vortex under screen cleaner.

2. Type **bluon** using the keyboard.
3. Press **Enter**, the message **'Blue Under-Screen Cleaner Enabled'** is displayed in the message prompt bar.
4. Press **Exit**.

To disable the blue under screen cleaner carry out the following:

1. Press the function key **F10** on the keyboard, a window of the following form is displayed:

DEK 265 GS (X)	
Serial Number	: 201305
Processor Type	: 486DX - or higher
Executable date	: April 19 1999
Executable time	: 10:57:38
Executable name	: RR0400.EXE
Software Version	: 04.00
Options Enabled	: S B N G
Comms Driver	: TCP
DOS Memory	: 512 kb
Free DOS Memory	: 316 kb
Available RAM	: 3223 kb

Enter to Close ...

2. Type **bluoff** using the keyboard.
3. Press **Enter**, the message **'Blue Under-Screen Cleaner Disabled'** is displayed in the message prompt bar.

The silver under screen cleaner becomes the current cleaner and all cleaner parameters revert to being appropriate to the previous cleaner.

The value of the configuration parameter cleaner type is set to silver and this parameter is written to the configuration file.

4. Press **Exit**.

To enable the Vortex under screen cleaner carry out the following:

1. Press the function key **F10** on the keyboard, a window of the following form is displayed:

DEK 265 GS (X)	
Serial Number	: 201305
Processor Type	: 486DX - or higher
Executable date	: April 19 1999
Executable time	: 10:57:38
Executable name	: RR0400.EXE
Software Version	: 04.00
Options Enabled	: S B N G
Comms Driver	: TCP
DOS Memory	: 512 kb
Free DOS Memory	: 316 kb
Available RAM	: 3223 kb

Enter to Close ...

2. Type **vorton** using the keyboard.
3. Press **Enter**, the message '**Vortex Under-Screen Cleaner Enabled**' is displayed in the message prompt bar.

The Vortex under screen cleaner becomes the current cleaner and all cleaner parameters become appropriate to the Vortex cleaner.

The value of the configuration parameter cleaner type is set to Vortex and this parameter is written to the configuration file.

4. Press **Exit**.

To disable the Vortex under screen cleaner carry out the following:

1. Press the function key **F10** on the keyboard, a window of the following form is displayed:

DEK 265 GS (X)	
Serial Number	: 201305
Processor Type	: 486DX - or higher
Executable date	: April 19 1999
Executable time	: 10:57:38
Executable name	: RR0400.EXE
Software Version	: 04.00
Options Enabled	: S B N G
Comms Driver	: TCP
DOS Memory	: 512 kb
Free DOS Memory	: 316 kb
Available RAM	: 3223 kb

Enter to Close ...

2. Type **vortoff** using the keyboard.
3. Press **Enter**, the message '**Vortex Under-Screen Cleaner Disabled**' is displayed in the message prompt bar.

The silver under screen cleaner becomes the current cleaner and all cleaner parameters revert to being appropriate to the previous cleaner.

The value of the configuration parameter cleaner type is set to silver and this parameter is written to the configuration file.

4. Press **Exit**.

Paste Trails

Provides the capability to reduce solder paste trails from squeegees automatically, options are:

Disabled; Mode 1

If mode 1 is selected, any paste that has dripped from the squeegee is scooped up, by the squeegee back to the paste roll. This process occurs at the start of every stroke, with the print mode set to print/print and at the start of only the print stroke, when the print mode is set to flood/print or print/flood.

Transport Wait Mode

This option enables the product to be held in contact with the screen until both upline and downline systems are ready to transfer, options are:

Standard; Hold_at_Print

The default is Standard.

Clamp Type

Sets the type of board clamp used, options are:

Board Clamp; Snuggers

The default is Board Clamp.

To eliminate vacuum seal loss during alignment, if the Snuggers option is selected and the tooling type is Vacuum, the rails do not dip when the camera is traversing.

Snugger Thickness

This Set Preference appears if Snuggers has been selected from the Clamp Type preference

Min 0.8mm

Max 2.0mm (2.01mm is displayed but 2.0mm is the maximum value selectable)

Increments 0.1mm

The default is 1.6mm.

Tooling Monitoring

This parameter sets, while Feature Licensing asserts that use of Tooling Deviation Monitoring is authorized, the frequency (in boards printed) at which monitoring is performed. Monitoring is also carried out on the first print stroke of a print run.

Min 0 boards (Tooling Monitoring disabled)

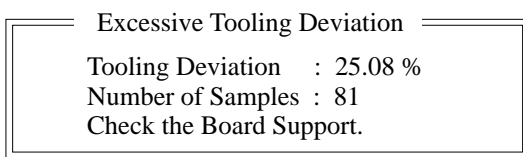
Max 200 boards

Increments 1

The default is 0 boards.

This feature only applies while squeegees are fitted.

When a particular print stroke is being monitored, as the squeegee traverses the image the pressure being applied is measured and recorded. Any variations in the load being applied, as a result of insufficient tooling support or underside components coming into contact with the tooling are noted. Upon completion of the print stroke, the deviation in the pressure applied over the print stroke is determined and expressed as the tooling deviation. The tooling deviation is calculated from the minimum and maximum values and expressed as a percentage. If the tooling deviation exceeds the permitted threshold, as set by the Tooling Deviation parameter in the product file, a cyclic log text file called deviate.dat is written and the following window is displayed:



NOTE

The number of samples is the amount of pressure variations recorded during the print stroke.

The following menu bar is displayed:



On selecting **Continue** printing proceeds until it is interrupted by some other cause.

On selecting **Abort** printing is discontinued and the following menu bar is displayed, to enable the board to be removed from the machine:



If the number of samples (pressure variations) during a print stroke is less than 2 or the minimum value is zero, the error message **'Failed to determine Tooling Deviation'** is displayed.

Display Type

Sets the type of status page displayed on the monitor, options are:

Type 1; Type 2

The default is Type 1.

Fiducial Monitoring

The parameter enables and disables the intelligent fiducial monitoring feature, options are:

Smart; Normal

The default is Smart.

If Smart is selected, a Set Levels menu bar option is available.

		Set Levels	Next	Previous	Incr.	Decr.	Exit
--	--	------------	------	----------	-------	-------	------

On pressing the **Set Levels** key, a window opens as follows:

SMART FIDUCIAL MONITORING	
SCORE WARNING LEVEL	500
VAR'N WARNING LEVEL	10
AUTOMATIC RETRY	OFF

The **Next** and **Previous** keys move the cursor between the three parameters.

The **Incr.** and **Decr.** keys increase and decrease the value of the top two parameters and turn the Automatic Retry ON and OFF.

The **Exit** key closes the window and returns to the set preferences window.

The range of values for the three parameters are as follows:s:

Score Warning Level:

Min 0

Max 500

Var'n Warning Level:

Min 0

Max 500

Automatic Retry:

Off; On

Score Warning Level

During fiducial set up the score achieved after training each fiducial is analyzed. If the score fails to achieve the target score by more than Score Warning Level, an instruction box appears recommending the operator check video settings, fiducial parameters etc.

Var'n Warning Level

While the machine is running, the score for every fiducial located is monitored. If for a given fiducial, the score from one fiducial to the next varies by more than the Score Variation Warning Level, but does not fall below the minimum accept score, a message window is displayed, warning that the score of the screen/board fiducial is fluctuating. Fiducial relearning is advised if the problem persists.

Fiducial Search The parameter enables an auto search to be selected if a screen fiducial or board fiducial are not found. The feature also enables a machine to run a product setup on another machine, options are:

Custom; Disabled

The default is Disabled.

Setup If Custom is selected, an Adjust option becomes available on the menu bar:

		Adjust	Next	Previous	Incr.	Decr.	Exit
--	--	--------	------	----------	-------	-------	------

On selecting **Adjust** from the menu, a Fiducial Search Strategy Window opens:

Fiducial Search Strategy	
AUTOSEARCH	All Boards
WINDOW SIZE	16 mm

The menu bar changes to:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

The **Next** and **Previous** keys move the cursor between the two parameters.

The **Incr.** and **Decr.** keys change the value of the highlighted parameter.

The **Exit** key returns to the set preferences menu.

Autosearch This parameter sets whether an automatic search can be selected following a Fiducial Not Found Error Message. The options are:

1st Board; All Boards

The option Auto Search (F2) is added to the menu bar as follows:

Retry	Auto Search	Fiducial Setup		Search Step	Search Reset		Abort
-------	-------------	----------------	--	-------------	--------------	--	-------

Depending on the setting, the option Auto Search (F2) is available for the 1st board or all boards of a batch, following a Fiducial Not Found Error Message.

If Auto Search is selected, the machine uses the following strategy to search for the fiducial. The sequence continues until the fiducial is found:

1. The camera starts in the nominal fiducial position, determined by the product file.
2. The camera attempts to locate the fiducial within its field of view.
3. The camera stays in position and repeatedly searches for the fiducial, each time using a different adjustment of the camera lighting.

4. The camera moves to another position in the search window area.
5. If the whole search window area has not been covered, the sequence returns to Step 2.
6. If the the whole search window area has been covered with no fiducial being found, the camera moves to the nominal position and an error is generated.

NOTE

If 2D board inspection is enabled on a machine this feature searches for screen fiducials only.

Window Size	This parameter sets the size of the window area that is searched around the nominal fiducial location, options are 10mm or 16mm.
Local Product File	<p>The offset values (differences between the product file and set up of the machine) are stored locally on the hard disk in an offsets file called local.lpf. For each product file, any offset values required are stored added to the offsets file . The addition to the offsets file is made when the first board is run and only if Custom is selected.</p> <p>Because the product file is not updated other machines are able to share the product file.</p>
Loading a Product	When a product is loaded, if Custom is selected and a corresponding entry in the offsets file (local.lpf) exists, the parameters are read from the offsets file and added to the corresponding parameters from the product file, the sum of the two values for each fiducial offset is used as the new parameter. The chase offsets are calculated for the first board and are saved to the local.lpf file.
Actuator Limits	If due to the new fiducial positions the actuators are required to go close to their limits a warning is generated. If the actuator would need to travel beyond its limit an error is generated and the red beacon is illuminated.
Remote Board Stop	<p>Sets whether the remote board stop facility is to be used, options are: Fitted; Not Fitted</p> <p>The default is Not Fitted.</p>
Board Stop X Offset	<p>This parameter allows for the input of an offset to compensate for variations in the focal lengths of the vision systems between machines.</p> <p>Min 20mm Max 40mm The default is 27mm.</p> <p>This parameter has no function while remote board stop is fitted.</p>

SPC Port Config This preference allows the user to set the configuration of the SPC port output rate and data format.

Selecting the **Incr.** or **Decr.** buttons whilst this preference is highlighted opens a further parameter window.

SPC Output	
BAUD RATE	9600
WORD LENGTH	8
PARITY	None
STOP BITS	1

The menu bar changes to:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

The **Next** and **Previous** keys move the cursor between the parameters.

The **Incr.** and **Decr.** keys change the value of the highlighted parameter.

The **Exit** key returns to the set preferences menu.

The four adjustable parameters have the following ranges:

Parameter	Options	Default
Baud Rate	110, 300, 600, 1200, 2400, 3600, 4800, 9600, 14400, 19200, 28800, 38400	9600
Word Length	5, 6, 7, 8	8
Parity	ODD, EVEN, NONE, MARK, SPACE	NONE
Stop Bits	1, 2	1

NOTE

The faster the baud rate the faster information transfer occurs.

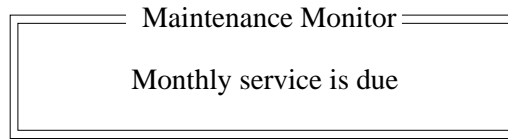
SPC data is output when any of the following occur:

- SPC output cycle (as per Output Rate)
- Alignment Inspection Cycle
- 2D Inspection Cycle

Machine Location This allows the operator to enter text to uniquely identify the machine. Output is via GEM, Host Comms and SPC.

Maint. Monitoring This preference, when enabled, provides an indication to the operator when a preventive maintenance service is due. Options are:
Enabled; Disabled

When enabled, if Run (F1) is pressed on the menu bar and a service is due, the amber light on the tricolour beacon is illuminated. The following window is displayed:



The message in the window varies dependent upon the type of service due. If a period of one month or 45,000 cycles has elapsed, the message is as shown above. If a period of six months or 260,000 cycles has elapsed, the message is 'Six Monthly service is due'. If a period of one year or 520,000 cycles has elapsed, the message is 'Yearly service is due'.

The menu bar changes to the following:



The **Done** key updates the maintenance monitor data file, named service.dat, as follows:

The service cycle counter is reset to zero.

The service number is incremented.

The last service date is reset to the current date.

The warning window is cleared, the amber beacon changes to green and the printing run commences.

The **Defer** key does not update the maintenance monitor data file.

The warning window is cleared, the amber beacon changes to green and the printing run commences. As the file has not been updated, the next time the Run key is pressed the maintenance monitor window is displayed again. This routine continues until the Done key is pressed.

If Maintenance Monitoring is disabled, left disabled for several service periods, either calender or cycle or both, and enabled again:

The next time Run is pressed, the maintenance monitor software determines how many service periods have been exceeded. From this information it determines if any higher order servicing has been missed during the disabled period. If a higher order service would have become due during the disabled period, that service message is displayed.

Vacuum Hold Time This parameter introduces a time delay between raising the table to flex print height and initiating Flatten Vac Delay.

- Min 0.0 sec
- Max 5.0 secs
- Increment 0.1 sec.



265GSX
265Lt

CHAPTER 3

HOST COMMUNICATIONS

HOST COMMUNICATIONS

COMMS PROTOCOL OPTIONS*NOTE*

Host Comms and therefore Comms Protocol Options are available for the 265GSX only

SECS

Allows a host computer running SECS II compatible software to talk to the machine via a serial cable connected to the 265 Host Comms port. This configuration can also be used for GEM if RS232 is preferred to TCP/IP.

If the Host is a PC, DEK's Off-line Editor software can be used to modify product files. The Event Log can be read with a text editor.

GEM

This configuration implements the SMEMA standard for communications for Surface Mount Equipment. GEM (Generic Equipment Model) is a standard sub-set of the SECSII protocol. GEM is specifically designed for implementing equipment automation in a production environment.

In this configuration, a host computer running SECS II/GEM compatible software talks to the machine via a Network cable. The protocol used is SECS II.

If the Host is a PC, DEK's Off-line editor software can be used to modify product files. The Event Log can be read by a text editor. The flexibility of the GEM interface allows data collection to be customized to meet the users requirements.

Net_Files

This configuration allows users to redirect files away from the Machines local hard drive to a remote directory on a file server. The 265 is configured to access a 'product' directory for a product file and a 'data' directory for output data files.

At the 265 Machine when a product file is loaded it is read from the 'product' directory on the network file server. When it is saved it is saved to the 'product' directory on the file server. Files cannot be read from the printer or sent to the printer across the network.

Once the files are present on the server, they can be accessed from a networked PC without interfering with the 265 Machine.

At a networked PC, DEK's Off-line Editor software can be used to modify product files. QC-Calc software can be used to access SPC data in the 'READINGS.DEK' file. The Event Log can be read with a text editor.

For details of Comms Protocol Selection see the next section.

Selecting Comms Protocol Options The Comms Protocol Set Preference SECS, GEM, and NET_FILE options each display additional menu parameters if they are selected in the Set Preferences window.

On selecting SECS or GEM the following menu bar is displayed:

Enable Comms			Next	Previous	Incr.	Decr.	Exit
--------------	--	--	------	----------	-------	-------	------

On selecting NET_FILE the following menu bar is displayed:

Enable Comms	Edit Comms		Next	Previous	Incr.	Decr.	Exit
--------------	------------	--	------	----------	-------	-------	------

If the **Enable Comms** key is pressed a warning window is displayed, relevant to the chosen option.

HOST COMMS	
<p>WARNING: SECS COMMS SHOULD ONLY BE ENABLED IF SECS DRIVER INTERFACE IS INSTALLED IN THIS MACHINE.</p> <p>PLEASE CONFIRM OR EXIT.</p>	

The window warns the user that the appropriate comms interface should be connected before proceeding and the user is given the option to **Confirm** or **Exit** their selection using the following menu bar:

Confirm							Exit
---------	--	--	--	--	--	--	------

The NET_FILE option may cause a further window to appear requesting the Network Password.

Editing NET_FILE Comms Options The NET_FILE comms editing window allows the user to change IP addresses, user ID, file paths etc.

To enter the Edit Comms window from the set preferences window, select NET_FILE from the Comms Protocol set preference and press the Edit Comms menu bar option.

The Edit Comms window appears as follows:

Net Param	Session	Default
Remote IP	192.100.20.100	192.100.20.100
User ID	Login/_name	Login/_name
Products Path	product/	product/
Data Path	data/	data/
Auto Login		?
Local Copies	N	N

To edit the Edit Comms window the following menu bar appears:

		Edit	Next	Previous	Left	Right	Exit
--	--	------	------	----------	------	-------	------

The **Next** and **Previous** keys are used to move the cursor up and down the current column.

The **Left** and **Right** keys move the cursor between the two parameter columns.

The **Edit** keys makes the parameter under the cursor editable. When editing a parameter the cursor keys and the delete keys can be used as well as the normal alphanumeric keys. While editing a parameter (the cursor is still flashing), pressing the Exit key finishes the current parameters editing.

The **Exit** key is used to leave the Edit Comms window.

IP ADDRESS CONFIGURATION

For a 265GSX Machine to function in a network environment, correct setting of its IP Address is necessary. The IP Address (Internet Protocol Address) provides a unique global address for both the machine and the network.

Note

IP Addresses must be provided by the sites Line or Network Manager.

TCP/IP Driver (GEM and NET_FILES)

The IP address of the printer must be set up in the TCP/IP driver. This can be done when the PC/TCP software is installed using INSTALL.EXE. The set-up can be re-configured later by running CONFIG.EXE in the PC/TCP directory. The PC/TCP manual supplied with the PC/TCP software covers this in detail.

SDR Driver (GEM only)

The IP address of the printer must be set up in the SDR driver. To do this edit the SDR configuration file "c:\printer\conf170.cfg" (see next page) using a text editor. The DOS program EDIT is suitable and can be used by typing the following from the DOS prompt:

```
EDIT C:\printer\conf170.cfg
```

Set the PASSIVE ENTITY IPADDRESS to the printers "IP address".

If there is more than one printer communicating with the GEM Host, set the DEVICEID differently for each printer. The default value is 0x109 (265). Alternative DEVICEID values should be chosen within the range 0x0000 - 0x7FFF (0 - 32767).

Configuration File /* SDR-DOS-170 Sample Configuration File*/

PORT 0:

```

PROTOCOL HSMS94
EQUIPMENT
PASSIVE ENTITY
PASSIVE ENTITY IPADDRESS 192.100.20.51
PASSIVE ENTITY TCPPOINT 5265
T3 30
T5 5
T6 10
T7 5
T8 6
CONNECTION ESTABLISHMENT 5
CIRCUIT ASSURANCE 20
TGRACE 15
MEMORY STALL 5
WRITE STALL 7
START
    
```

DEVICE 0:

```

DEVICEID 0x109
PORT 0
START
    
```

Definitions of Fields The majority of these fields never need to be changed. They are described here to give an understanding of how to configure the driver when changing IP addresses, Device ID's or some of the timer values.

- | | |
|------------------------------|---|
| Port 0: | Defines this port as SECS port 0. |
| Protocol HSMS94 | Selects the protocol that the SDR driver uses. |
| Equipment | Defines that the printer end of the link is the equipment end. |
| Passive Entity | Defines that the printer is the passive entity and that the host is expected to establish the TCP/IP connection. A GEM host is almost always the active entity. |
| Passive Entity IP Address | Sets the IP address of the printer. |
| Passive Entity TCP Port 5265 | Specifies a TCP Port number at which the passive entity waits for a connection on this HSMS link. Typically a number beginning at 5000. |

T3 30	Sets the HSMS-SS T3 reply timeout to 30 seconds. If the printer does not receive a reply within this time a S9F9 Transaction timeout error message is transmitted.
T5 5	The HSMS-SS T5 Connect separation Timer value. Only used by an “ACTIVE” entity.
T6 10	The HSMS-SS T6 Control Message Reply Timer value. should be less than T3 10 is a typical value.
T7 5	The HSMS-SS T7 Connect Timeout value. The time that the PASSIVE Entity waits to receive a HSMS Select.req control message after a TCP/IP connection has been established. If the time is exceeded the TCP/IP link is terminated.
T8 6	The HSMS-SS T8 Inter-character Timer value. The maximum time that SDR driver waits for a TCP/IP recv operation to complete. If the time is exceeded the TCP/IP link is terminated.
Connection Establishment 5	Only used by an “ACTIVE” entity.
Circuit Assurance 20	Defines the frequency at which the SDR Driver initiates a HSMS Linktest control transaction.
T Grace 15	A period during the start up of the link. when the SDR Driver accepts and buffers messages from the printer software.
Memory Stall 5	This limits how long the SDR Driver tolerates a situation where all of its buffers are full and the host is attempting to send more data. If the time is exceeded the TCP/IP link is terminated.
Write Stall 7	This limits the amount of time that the SDR driver waits for TCP/IP to accept data. If the time is exceeded the TCP/IP link is terminated.
Start	This statement automatically enables the port when the printer starts up.
Device 0:	This defines the printer as device 0.
Device ID 0x109	This allocates an ID to Device 0 (the printer). it is specified as a hexadecimal number. The default is 0x109 (265 decimal).



265GSX
265Lt

HOST COMMUNICATIONS IP ADDRESS CONFIGURATION

Port 0 This defines the port that device 0 uses. In this case Port 0. This refers to the configuration data previously defined for port 0 above.

Start This statement automatically enables the device when the printer starts up.

HOST COMMS

The machine provides the user with access to certain Host Comms options without accessing the maintenance function. The user is able to send and receive messages to and from the host computer via the Terminal Services option, upload product data files to the host computer, download product data files from the host computer and alter the equipment control level.



WARNING

HOST COMMUNICATIONS. BE AWARE THAT IF THE MACHINE SAFETY LOCKS ARE DEFEATED WHILST HOST COMMUNICATIONS ARE ACTIVE, A DANGER EXISTS WHEREBY MACHINE PARTS MAY MOVE UNEXPECTEDLY.

Terminal Services

Message From
GEM Host

When a message is sent to the machine from the Host, the following window is displayed:

Message From GEM Host	Message Time: 12:27:56
Testing host message passing	

Select **Ack Message** to acknowledge the message and close the message window.

							Ack Message
--	--	--	--	--	--	--	------------------------

Accessing Terminal
Services

To send and view messages to and from the Host proceed as follows:

1. Select **Host Comms**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	-------------------	-------------	-------------	-----------------	---------------	----------------	------

2. Select **Terminal Services**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
--------------------------	------------------	-------------------	---------	----------	--------------	--	------

The terminal services message windows are displayed as follows:

Message From GEM Host	Message Time: 12:27:56

Message to GEM Host	Message Time: 12:27:56
-	

The most recent message from the Host is displayed in the upper window. If a new message arrives while the window is open, the upper window displays the new message and the Ack Message key is visible. Select **Ack Message** to acknowledge to the Host that the message has been received.

							Ack Message
--	--	--	--	--	--	--	--------------------

3. To send a message to the Host, type the message using the keyboard, the message appears in the lower window.
4. Select **Send Message** to send the message in the lower window to the Host.

Send Message							Exit
---------------------	--	--	--	--	--	--	------

5. Select **Exit**.

							Exit
--	--	--	--	--	--	--	-------------

Upload a Product Data File

To upload a product data file from the Host proceed as follows:

1. Select **Host Comms**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	-------------------	-------------	-------------	-----------------	---------------	----------------	------

The Host Communications window is displayed as follows:

Host Communications	
Communications Protocol	GEM
Communications:	Enabled-Communications
Equipment Control	On-Line
On-Line Control	Remote

2. Select **Transfer To Host**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	-------------------------	-------------------	---------	----------	--------------	--	------

The Upload Data File window is displayed as follows:

Upload Data File
CALIBRA
CIRCLE
CROSS
DEFAULT
DEK04
HASH
NEWFILE
NEWFILE2
ODDFILE
SQUARE
TEST
TEST2
TEST3
TRIANGL

3. Using the **Left, Right, Up** and **Down** keys, highlight the required data file.

Upload File			Left	Right	Up	Down	Exit
-------------	--	--	-------------	--------------	-----------	-------------	------

4. Select **Upload File**, the chosen product data file is transferred to the Host.

Upload File			Left	Right	Up	Down	Exit
--------------------	--	--	------	-------	----	------	------

5. Select **Exit**.

Upload File			Left	Right	Up	Down	Exit
-------------	--	--	------	-------	----	------	-------------

6. Select **Exit**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	------------------	-------------------	---------	----------	--------------	--	-------------

Download a Product Data File

To download a product data file from the Host proceed as follows:

1. Select **Host Comms**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	-------------------	-------------	-------------	-----------------	---------------	----------------	------

The Host Communications window is displayed as follows:

Host Communications	
Communications Protocol	GEM
Communications:	Enabled-Communications
Equipment Control	On-Line
On-Line Control	Remote

2. Select **Transfer To Equip**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	------------------	--------------------------	---------	----------	--------------	--	------

The Download Data window is displayed as follows:

Download Data
File Name: _____

3. Enter the name of the required product data file to download from the Host, via the keyboard.
4. Select **Download**, the chosen product data file is transferred from the Host.

Download							Exit
-----------------	--	--	--	--	--	--	-------------

5. Select **Exit**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	------------------	-------------------	---------	----------	--------------	--	-------------

Equipment Control Level To change the equipment control level proceed as follows:

1. Select **Host Comms**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	-------------------	-------------	-------------	-----------------	---------------	----------------	-------------

The Host Communications window is displayed as follows:

Host Communications	
Communications Protocol	GEM
Communications:	Enabled-Communications
Equipment Control	On-Line
On-Line Control	Remote

2. Select the required equipment control level from the three options:
On-Line, Off-Line or Local/Remote.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	------------------	-------------------	----------------	-----------------	---------------------	--	------

3. Select **Exit**.

Terminal Services	Transfer To Host	Transfer To Equip	On-Line	Off-Line	Local/Remote		Exit
-------------------	------------------	-------------------	---------	----------	--------------	--	-------------

4. Select **Exit**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	-----------------	---------------	----------------	-------------



265GSX
265Lt

CHAPTER 4

ERROR MESSAGES

ERROR MESSAGES

INTRODUCTION If for any reason the machine does not complete a particular sequence in the time allowed for in software, then an error condition arises. The relevant error message is displayed on the main control screen.

Machine Errors are detected by sensors specifically designed for checking correct machine status (System Power, Pneumatic Power, etc.) or by functions failing to achieve their correct operation. These latter errors are either detected by a limit sensor being operated or by setting a time limit for their completion. The time limits are set so they are 1.5 times the longest possible time taken for that particular operation, after which, if not completed, an error is reported on the main control screen.

When an error occurs the relevant message is displayed on the main control screen. The displayed error message is accompanied by information regarding the possible causes and the corrective action to be taken.

The Tricolour beacon changes to red and records the error in the Event Log file.

ERROR RECOVERY

- Abort** Pressing this option re-initializes the entire printer, ejecting any product that may be in the printer and returning to the main control page.
- Retry** Selecting this option re-checks the error condition and if clear continues the print cycle.
- Recover** Pressing this option attempts to continue with any cycle that is in operation. This function sets modules (paste dispenser, print carriage, etc.) to their home position and then ejects the board that is currently in the printer without re-initializing the machine. This option should be the first to be operated if there is an error reported.
- Diagnostics** This option is only displayed if diagnostics is selected by the keyswitch. It enables the diagnostics to be entered immediately, normally by a technician, for more in-depth investigation of the problem.
- Head** This allows the operator to operate the 'Head' function to gain access under the printhead.
- Continue** When this option is available, selecting the continue key clears the error message and continue with the cycle that is in operation.
- Fiducial setup** When this option is available, selecting the Fiducial Setup key allows the user to relearn the reported 'Not Found' fiducial.
- Auto Search** When this option is available, selecting the Auto Search key instigates a search within the selected window size to locate the 'Not Found' fiducial.
- Search Step** When this option is available, selecting the Search Step key moves the camera the first step in a search procedure designed to locate the 'Not Found' fiducial. Further selection of the key moves the camera to the second step etc. Once the fiducial is visible in the region of interest, the Retry key can be selected to capture the fiducial.
- Search Reset** When this option is available, selecting the Search Reset key returns the camera to its original position, before the Search Step key was selected. This is the position from which the 'Not Found' fiducial was reported.

ERROR MESSAGE LISTING

Error Message	Intpretation
Action Command Error	This error reports that an undefined return status message from the mint is received. A possible cause is : Communication problems between the mint and the MOD801 card.
Alignment Out of Range	This indicates that the actuator positions required to achieve a satisfactory alignment are not achievable.
Alignment Close to Limit/Out of Range	Actuator limit exceeded.
Autoflex Timed Out	This error reports that with the autoflex tooling on high power and the tooling pins up, the process time of 5 minutes has been exceeded. When this message is displayed the power is also switched to low.
Board Detected At Board Stop, Print Terminated.	With the machine running in any mode, this error reports that the board stop sensor has been activated out of sequence. Possible causes are: Board already loaded into the machine. Sensor is detecting tooling. Sensor is faulty.
Board Fiducial Not Found	This error reports that the vision system has been unable to locate the board fiducial.
Board Not Over Input Sensor	This error reports a machine has staired without a board on the rails. The user has ignored the message to place a board on the rails and selects continue on the machine.
Board On Rails, Remove and Continue	This error reports that a board has been sensed on the rails during one of the following operations: Initialization Loading a new board file Entering the rail system in diagnostics.
Board Stop Not Lowered	This error reports that the board stop is up and has not lowered within the time-out period of 3 seconds. The possible causes are: Board stop sensor, enter diagnostics and check the sensor changes state. Air pressure failure to the board stop.
Board Stop Not Retracted	This error reports that the board stop is down and has not retracted within the time-out period of 3 seconds. A possible cause is: Board stop sensor - enter diagnostics, digital inputs and check the sensor changes state.
Board Stop Stuck	This error reports that the board stop, which is housed in the camera assembly has failed to lower or retract.
Board Stuck in Rails	This error reports that the board has failed to either reach the board stop or exit the machine after being printed.
Camera X Axis Error	This error reports that the camera carriage has failed to reach its home position in the X axis.
Camera Y Axis Error	This error reports that the camera carriage has failed to reach its home position in the Y axis.

Error Message	Intrepretation
Command Timed Out (Belt Motors)	This error reports if a board on the belt fails to move over the board at left/right sensor within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Camera Axes)	This error reports that the camera has failed to move to the demanded position within the time period. This error applies to both the X and Y camera axis. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Paste Dispense Carriage)	This error reports that the paste dispense carriage has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed out (Print Carriage)	This error reports that the print carriage has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Print Head)	This error reports that the print head fails to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Proflow)	This error reports that the proflow unit has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Rail System)	This error reports that the moving rail has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.

Error Message	Intpretation
Command Timed Out (Screen Actuators)	This error reports that the actuator has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Screen Change)	This error reports that the screen change has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Command Timed Out (Front/Rear Squeegee)	This error reports that the front/rear squeegee has failed to move to the demanded position within the time period. Possible causes are: Home sensor fault, if occurring during initialization. Motor fault, if occurring during initialization. Motor not running. Mint card faulty. Problem on the busy line from the mint card.
Downline Board Transfer Fault	This error reports that the time the downline interface has waited for a board has exceeded the time-out.
Downline Machine Not available	This error reports that the downline machine is unavailable to accept the next board.
Dual Shuttle Fault	This error reports that the 20 seconds time-out period has been exceeded when loading or unloading a screen.
Event File Open Error	This error reports that there was a problem opening the event log backup file.
Failed to Determine Tooling Deviation	This error reports that while monitoring the tooling deviation, the number of samples (pressure variations) during the print stroke was less than 2 or the minimum value was zero. This error message is only valid where tooling deviation is authorized and enabled. Check tooling support is sufficient. Check underside components are clear of tooling.
Front Squeegee Error	This error reports that the front squeegee has failed to reach its fully up position.
Front Squeegee Pressure Error	When this error is detected a new window displays the set pressure reading and the actual pressure reading.
File Error	<i>(To be added when details available)</i>
Have All Tooling Pins Been Removed ?	This message appears for the user to confirm that all magnetic tooling pins have been removed, before setting up the machine for a new board file that uses autoflex tooling.
Invalid Calibration Data. Recalibrate ProFlow Heights	This error reports that the ProFlow calibration data is corrupt or invalid.
Invalid Calibration Data. Recalibrate Squeegee Heights	This error reports that the squeegee calibration data is corrupt or invalid.
Lid Bolt Fault	This indicates that the lid bolt has failed to either open or close.

Error Message	Intrepretation
No Paste Knead Cycles Selected	This error reports when Knead Paste is selected on main menu page and Knead Deposits in Set Prefs is selected to 0 cycles.
Paste Carriage Error	This error reports that the paste carriage has failed to reach its home position.
Paste Cartridge Tilt Error	This error reports that the paste cartridge mechanism has failed to either make its up or down limit switches.
Pneumatic Power Down	This error message reports that the pneumatic supply is either too low or has been disconnected
Position Error (Camera)	This error reports that the cameras actual position is not within the tolerance of 1% of the designated position.
Position Error (Print Carriage)	This error reports the print carriage actual position is not within tolerance of its designated position.
Position Error (Rising Table)	This error reports that the rising table has failed to reach its home position.
Position Error (Screen Load)	This error reports that a problem has occurred while unloading the screen. Possible causes are: Motor fault Sensor fault
Print Carriage Error	This error reports that the print carriage has failed to move.
Proflow Downstop At Limit	This error reports when the downstop reaches set limits whilst using the jog buttons in Diagnostics (Drive Downstop Using Jog Buttons).
Proflow at movement limit	This error reports when the proflow reaches set limits whilst using jog buttons in Diagnostics(Drive System Using Jog Buttons).
Rail Lifted Error, Check Tooling	This error reports that either the left rail lifted sensor or the right rail lifted sensor are out of their home positions when any of the following moves are taking place: Alignment of the screen Board stop moving into position Initialization of the machine Initialization of the autoflex tooling Possible causes are: A misfed board Tooling/object on the rising table striking the underside of the rails
Rear Squeegee Error	This error reports that the rear squeegee failed to reach its fully up position.
Rear Squeegee Pressure Error	When this error is detected a new window displays the set pressure reading and the actual pressure reading.
Rising Table Error	This error reports that the rising table has either failed to reach its fully down position or that when attempting to reach the required height during the machine cycle did not achieve the positional accuracy.
Rising Table Out of Position	This error reports that either; the camera axes are not at the home position when the rising table is to be lifted, or the rising table is at a height greater than vision height by 1mm.
Screen Changer Drive Error (265GSX only)	This error indicates that no screen movement has been detected when the screen changer is attempting to move the screen either at initialization or at a screen change request.

Error Message	Intpretation
Screen Cleaner Out Of Position	This error reports that the screen cleaner is out of position. Possible causes are: Screen Cleaner not at the home position. Home sensor - enter diagnostics, digital inputs and check the sensor changes state. If a screen cleaner is not fitted , check that the home sensor is not connected.
Screen Couplings Not Extended	This error reports that the screen couplings have failed to extend within the 4 second time-out period.
Screen Fiducial Not Found	This error reports that the vision system has been unable to locate the screen fiducial.
Screen Not Correctly Located. Reposition ! (Lt machines only)	This error reports that a screen has not been detected by the screen at rear sensor.
Screen XF Error	This error reports that the X forward screen actuator failed to initialize to its central datum.
Screen XR Error	This error reports that the X rear screen actuator failed to initialize to its central datum.
Screen Y Error	This error reports that the Y screen actuator failed to initialize to its central datum.
Set Pressure %2.21f Actual Pressure %2.21f (Front/Rear Squeegee)	This error reports if the front/rear squeegee pressure differs from the pressure set by more than $\pm 1.00\text{Kg}$.
Stop After Idle Time Exceeded	This error reports if the idle time is exceeded, the options to continue or abort are displayed. Continue resets the idle timer or abort allows for Manual or Auto unload.
System Power Down	This error reports that the 24V motor power has been switched off either by the Emergency Stop button being activated (including upline and downline external machines) or that the removable frame access cover has been removed
System Suspended While Covers Open	This error reports that whilst the machine was switched on, one or more of the cover interlock switches were out of position.
Table Movement Inhibited, Camera Not Home.	This error reports that the camera is over the table and the mint is sent an instruction to move the rising table.
This Diagnostic Cannot Run Until Proflow Is At home	This error reports if proflow is not in the home position (Print Carriage Diagnostics only).
This Diagnostic Cannot Run With Proflow Fitted	This error reports if in Print Carriage Diagnostics, Move Print Carriage to Paste Position is selected.
Unable to Find Fiducial	This error reports that the vision system is unable to locate the relevant screen or board fiducial.
Upline Board Transfer Error	This indicates that there is a problem in loading a board from the upline machine.
Upline Machine Not Available	This error reports that the upline machine is unavailable to accept the next board.
Window Error	This error reports that the menu structure has failed to open correctly.

ERROR MESSAGES
ERROR MESSAGE LISTING



Error Message	Intrepretation
X Actuator Limit Exceeded	This error reports that either X actuators are driven past its limit set during calibration.
Y Actuator Limit Exceeded	This error reports that either Y actuators are driven past its limit set during calibration.



265GSX
265Lt

CHAPTER 5

DIAGNOSTICS

DIAGNOSTICS

INTRODUCTION The diagnostic function is an aid to the user to allow individual access and control to motors and modules. It allows the user to control the sequence of the machine so that a particular module can be exercised.

To enter the diagnostic mode the key switch on the Main Control Unit must be inserted and turned clockwise. This enables the Maint option to appear on the Menu Bar:

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	---------	---------------

Press the **Maint** button and the Menu Bar changes displaying the Diagnostic option.

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test cycles	Exit
-------------------	-----------------	-----------------	---------------	-----------	-----------------	-------------	------

Press the **Diagnostic** button and the message ‘**System Power Down**’ is displayed on the screen, pressing the ‘**System**’ button, enters into the main diagnostic menu. If a password exists a window displays the message ‘**Diagnostic Password**’. If the password is incorrect control displays the message ‘**Invalid password entered**’ and return to the previous menu. If the correct password is entered or no password exists a pop up window displays the following:

<p>Module Diagnostic Page</p> <ul style="list-style-type: none"> System Print Head Print Carriage ProFlow / Squeegee Camera Axes Rail System Paste Dispense System Screen Alignment Screen Change Screen Cleaner Rising Table Foreign Machine Interface Autoflex Tooling

The menu bar changes displaying the following:

Select Module		Next	Prev				Exit
------------------	--	------	------	--	--	--	------

Next /Prev keys move the highlight bar up and down the list of diagnostic modules.

Select Module key opens a new window displaying the diagnostic functions available for the selected module.

Exit returns operation to the start of initialisation

NOTE

Before any diagnostic function is used in any of the modules they must be homed first or they are not able to initiate a command.

SYSTEM

The system diagnostic module contains the following:

System Diagnostics	
Display all Digital Inputs	
Display all Analogue Inputs	
Toggle Red Beacon	ON
Toggle Amber Beacon	ON
Toggle Green Beacon	ON
Data Logging	OFF
Change Edit Password	
Change Diagnostic Password	
Change DOS Password	
Change Adjust Password	
Change Fiducial Set Up Password	
Change Network Auto-login Password	
Terminate Control and Return to DOS	

Digital Input Status

Selecting this option, a new window is displayed showing the relevant groups.

PCIB40#1 Group 0
PCIB40#1 Group 1
PCIB40#1 Group 2
PCIB40#1 Group 3
PCIB40#1 Group 4
PCIB40#2 Group 0
PCIB40#2 Group 1
PCIB40#2 Group 2
PCIB40#2 Group 3
PCIB40#2 Group 4
PCIB40#3 Group 0
PCIB40#3 Group 1
PCIB40#3 Group 2
PCIB40#3 Group 3
PCIB40#3 Group 4
PCIB40#4 Group 0
PCIB40#4 Group 1
PCIB40#4 Group 2
PCIB40#4 Group 3
PCIB40#4 Group 4
PCIB40#5 Group 0
PCIB40#5 Group 1
PCIB40#5 Group 2
PCIB40#5 Group 3
PCIB40#5 Group 4

Select Module		Next	Prev				Exit
------------------	--	------	------	--	--	--	------

PCIB40s are the I/O cards that are housed in the PC. There are five PCIB40 cards and are numbered as such. Each card has up to five groups, G0 - G4 and monitors and controls various drive and control cards in the Y1 and Y2 enclosure.

PCIB40s are divided into Inputs and Outputs.

Selecting each option displays another window displaying the functions.

Outputs - PCIB40#1 Group 0 (Card X1, Y2 Electronics Enclosure)

Right Signal Lamp	0	on/off
Head Latch	1	on/off
Cleaner Home Clamp	2	on/off
Left Signal Lamp	3	on/off
Alignment Lighting	4	on/off
Inspection Lighting	5	on/off
Screen Clamp	6	on/off
Chase Clamp	7	on/off

Outputs - PCIB40#1 Group 1 (Card X2, Y2 Electronic Enclosure)

Cleaner Vacuum Power	0	on/off
Solvent Tank Pressure	1	on/off
Cleaner Vacuum	2	on/off
Cleaner Blade	3	on/off
Not Used	4	on/off
Not Used	5	on/off
Release Table Brake	6	on/off
Vacuum Valve	7	on/off

Outputs - PCIB40#1 Group 2 (Card X3, Y2 Electronic Enclosure)

Soft E Stop	0	on/off
Board Stop	1	on/off
Not Used	2	on/off
Not Used	3	on/off
Clamp Board	4	on/off
Green Beacon	5	on/off
Amber Beacon	6	on/off
Red Beacon	7	on/off

Outputs - PCIB40#1 Group 3 (Card X4, Y2 Electronic Enclosure)

Tilt Cartridge Home	0	on/off
Lid Bolt	1	on/off
Screen Coupling	2	on/off
Tooling Pressure	3	on/off
Coupling Left	4	on/off
Coupling Right	5	on/off
Dispense Paste	6	on/off
Tilt Cartridge Away	7	on/off

Outputs - PCIB40#1 Group 4

No digital points found for this group
--

Outputs - PCIB40#2 Group 0 (Card X5, Y2 Electronic Enclosure)

Cleaner Paper Feed	0	on/off
Solvent Pinch Valve	1	on/off
Rear Belt Reverse	2	on/off
Rear Belt Forward	3	on/off
Front Belt Reverse	4	on/off
Front Belt Forward	5	on/off
Head Lift Slow	6	on/off
Head Lower Slow	7	on/off

Outputs - PCIB40#2 Group 1 (Card X5, Y2 Electronic Enclosure)

Decrease Width Slow	0	on/off
Increase Width Slow	1	on/off
Rear Belt Reverse Slow	2	on/off
Rear Belt Forward Slow	3	on/off
Front Belt Reverse Slow	4	on/off
Front Belt Forward Slow	5	on/off
Not Used	6	on/off
Not Used	7	on/off

Outputs - PCIB40#2 Group 2 (Cards X1 - X4, Y1 Electronic Enclosure)

Reset Card 3	0	on/off
Reset Card 2	1	on/off
Reset Card 1	2	on/off
Reset Card 0	3	on/off
Stop Card 3	4	on/off
Stop Card 2	5	on/off
Stop Card 1	6	on/off
Stop card 0	7	on/off

Outputs - PCIB40#2 Group 3

Tooling Data 0	0	on/off
Tooling Data 1	1	on/off
Tooling Data2	2	on/off
Tooling Data 3	3	on/off
Tooling Data 4	4	on/off
Tooling Data 5	5	on/off
Tooling Data 6	6	on/off
Tooling data 7	7	on/off

If FPA is fitted PCIB40#2 Group 3 is reconfigured from outputs to inputs as follows:

Inputs - PCIB40#2 Group 3

Tooling Jumper 0	0	on/off
Tooling Jumper 1	1	on/off
Spare Jumper	2	on/off
Spare Jumper	3	on/off
Spare Jumper	4	on/off
Spare Jumper	5	on/off
Spare Jumper	6	on/off
Spare Jumper	7	on/off

Tooling Jumper 0 and Tooling Jumper 1 form a two bit binary number as follows:

0 FPA not fitted
3 FPA fitted

Outputs - PCIB40#2 Group 4

Tool Gp Add 0	0	on/off
Tool Gp Add 1	1	on/off
Tool Gp Add 2	2	on/off
Tool Bd Add 0	3	on/off
Tool Bd Add 1	4	on/off
Tool Bd Add 2	5	on/off
Autoflex Power	6	on/off
Autoflex clamp	7	on/off

Inputs - PCIB40#3 Group 0

Cartridge Home	0	on/off
Cartridge Away	1	on/off
Cartridge empty	2	on/off
Rail Lifted Left	3	on/off
Board at Left	4	on/off
Board at Right	5	on/off
Table Home	6	on/off
BoardStop In	7	on/off

Inputs - PCIB40#3 Group 1

Board at Stop	0	on/off
Cleaning Unit Home	1	on/off
Drive Coupling Out	2	on/off
Screen at Centre	3	on/off
Screen at Rear	4	on/off
Screen at Front	5	on/off
Diagnostic Key	6	on/off
Power on Monitor	7	on/off

Inputs - PCIB40#3 Group 2

Printhead Up	0	on/off
Printhead Down	1	on/off
Left Jog Button	2	on/off
Right Jog Button	3	on/off
Covers and Head Sense	4	on/off
Screen Safety Rear	5	on/off
Rail Lifted Right	6	on/off
Air Pressure	7	on/off

Inputs - PCIB40#3 Group 3

Table Amp Error	0	on/off
Carriage Amp Error	1	on/off
Y Amp Error	2	on/off
X Amp Error	3	on/off
Screen Safety Front	4	on/off
GS Standard	5	on/off
Lid Bolt Shut	6	on/off
Head Open	7	on/off

Inputs - PCIB40#3 Group 4

GSX Camera Fitted	0	on/off
Rear Rail Justified	1	on/off
Paper Low	2	on/off
Solvent Low	3	on/off
Head Prop Stowed	4	on/off
Pinch Valve Fitted	5	on/off
F.P. Autoflex Fitted	6	on/off
LITE	7	on/off

Inputs - PCIB40#4 Group 0

Rail Bit 0	0	on/off
Rail Bit 1	1	on/off
Rail Bit 2	2	on/off
Rail Bit 3	3	on/off
Rail Bit 4	4	on/off
Rail Bit 5	5	on/off
Rail Bit 6	6	on/off
Rail Bit 7	7	on/off

Inputs - PCIB40#4 Group 1

Rail Bit 8	0	on/off
Rail Bit 9	1	on/off
Rail Bit 10	2	on/off
Rail Bit 11	3	on/off
Rail Bit 12	4	on/off
Rail Bit 13	5	on/off
Rail Direction	6	on/off
Rail Index	7	on/off

Inputs - PCIB40#4 Group 2

Error Card 1	0	on/off
Error Card 2	1	on/off
Error Card 3	2	on/off
Error Card 4	3	on/off
Rising Table Busy	4	on/off
Print Carriage Busy	5	on/off
Camera Busy	6	on/off
Not Used	7	on/off

Inputs - PCIB40#4 Group 3

Actuator Busy	0	on/off
Not Used	1	on/off
Not Used	2	on/off
Front Squeegee Busy	3	on/off
Rear Squeegee Busy	4	on/off
Paste Carriage Busy	5	on/off
Width Motor Busy	6	on/off
Screen Drive Busy	7	on/off

Inputs - PCIB40#4 Group 4

No digital points found for this group
--

Outputs - PCIB40#5 Group 0

Left SRO	0	on/off
Left RRO	1	on/off
Left ARO	2	on/off
Left TRO	3	on/off
Left MAO	4	on/off
Left GBO	5	on/off
Request to Receive	6	on/off
Request to Deliver	7	on/off

Outputs - PCIB40#5 Group 1

Right SRO	0	on/off
Right RRO	1	on/off
Right ARO	2	on/off
Right TRO	3	on/off
Right MAO	4	on/off
Right GBO	5	on/off
Change to New	6	on/off
Recovery Inhibit	7	on/off

Inputs - PCIB40#5 Group 2

Left ARI	0	on/off
Left TRI	1	on/off
Left MAI	2	on/off
Left SRI	3	on/off
Right ARI	4	on/off
Right TRI	5	on/off
Right MAI	6	on/off
Right SRI	7	on/off

Inputs - PCIB40#5 Group 3

Dual Shuttle Available	0	on/off
Available to Receive	1	on/off
Available to Deliver	2	on/off
Transferring	3	on/off
Interface Type Bit 1	4	on/off
Interface Type Bit 2	5	on/off
Interface Type Bit 3	6	on/off
Interface Type Bit 4	7	on/off

Inputs - PCIB40#5 Group 4

No digital points found for this group
--

Analogue Input Status

Selecting this option displays a window showing the analogue output of the load cell amplifier card of the squeegee pressure mechanism.

Analogue Input Values		
Description	Integer Value	Converted Value
Pressure Sensor	2327	8.51 Kg
Temperature (265GSXonly)	3644	24.573
Relative Humidity (265 GSX only)	2985	42.386

Tri-colour Beacon

Selecting any one of the three colours toggles them between on and off.

Data Logging

Selecting this function alternately enables and disables data logging during diagnostic operation.

Change Edit Password

Selection of this option prompts the operator to enter a new password.

Change Diagnostic Password

Selecting this option either allows a password to be inputted or changes an existing password. This password protection inhibits unauthorized entry into diagnostics.

Change DOS Password

Selecting this option either allows a password to be inputted or changes an existing password. This password protection inhibits unauthorized exit to DOS.

Change Adjust Password

Selecting this option allows a password to be inputted or changes an existing password. This password protection inhibits unauthorized adjustments.

Change Fiducial Set Up Password

Selecting this option allows a password to be inputted or changes an existing password. This password protection inhibits unauthorized entry into the fiducial set up.

Change Network Auto-login Password

Selecting this option allows a password to be inputted or changes an existing password. This password protection inhibits unauthorised access to the network.

Terminate Control and Return to DOS

Selecting this option terminates the machine and returns to the DOS prompt.

PRINT HEAD

The Print Head Diagnostic module contains the following:

Raise Head Under 2 Button Control	
Lower Head Under 2 Button Control	
Toggle Head Latch	on/off
Toggle Lid Bolt	on/off
Head Up Sensor	on/off
Head Down Sensor	on/off
Lid Bolt Shut	on/off
Head Prop Stowed	on/off
Left Jog Button	on/off
Right Jog Button	on/off

The menu bar changes to the following:

Run Diagnost			Next	Previous			Exit
-----------------	--	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.
Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.
Exit returns operation to the module diagnostics page.

Raise Head Under 2 Button Control Selecting this option allows the print head to be raised using the two button safety switches located on the front of the machine. These switches must be operated simultaneously.

Lower Head Under 2 Button Control Selecting this option allows the print head to be lowered using the two button safety switches located on the front of the machine. These switches must be operated simultaneously.

Toggle Head Latch Selecting this option alternately switches the print head magnetic latches on and off.

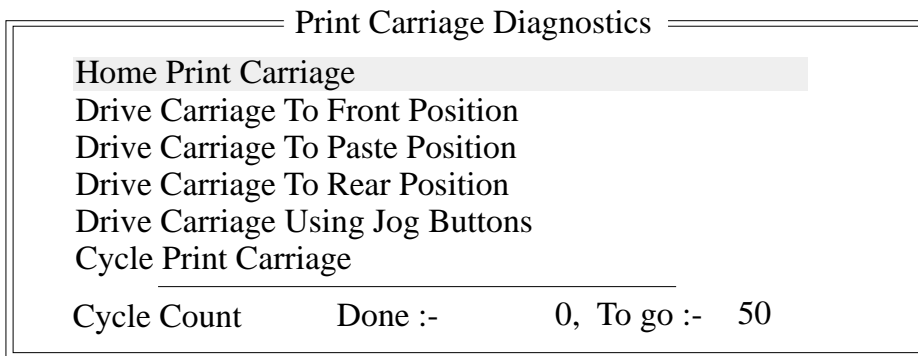
Toggle Lid Bolt Selecting this option alternately switches the printhead shot bolt on and off.

Head Up Sensor This option displays the head up sensor status.

Head Down Sensor This option displays the head down sensor status.

- Lid Bolt Shut** This option displays the operation of the printhead shot bolt located on the front of the machine.
- Head Prop Stowed** This option displays the pit prop stowed status.
- Left Jog Button** This option displays the operation of the left button of the two button safety switches located on the front of the machine.
- Right Jog Button** This option displays the operation of the right button of the two button safety switches located on the front of the machine.

PRINT CARRIAGE The Print Carriage diagnostic module contains the following:



The menu bar changes to the following:

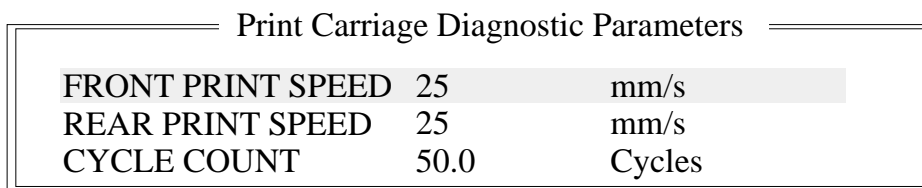
Run Diagnost	Adjust		Next	Previous			Exit
--------------	--------	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:



The menu bar changes to the following:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Next / Previous keys move the highlight bar up and down the list of diagnostic parameters.

Incr. / Decr. keys change the value of the selected diagnostic parameter.

Exit returns operation to the print carriage diagnostics page.

NOTE

These parameters are used in diagnostics only and have no affect on the product board file.

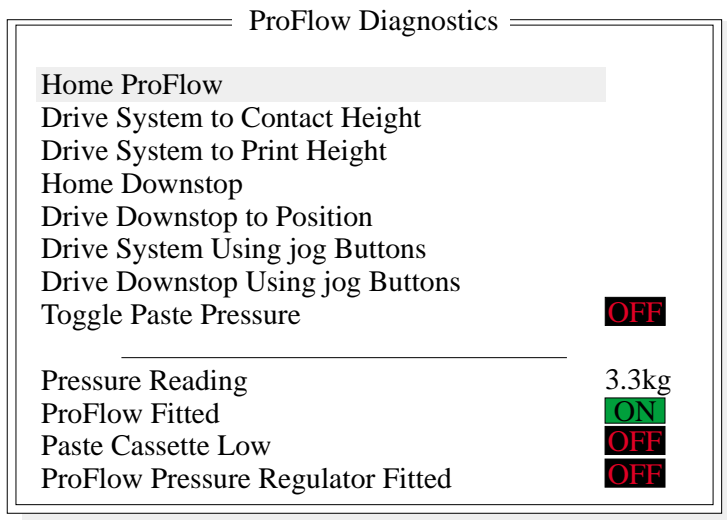
Home Print Carriage

Selecting this option moves the print carriage back to its home sensor position and stop. “Homing Print Carriage” is displayed in the prompt box. It is always advisable to home the print carriage before attempting to position it anywhere.

- Drive Carriage to Front Position** Selecting this option moves the print carriage to the front start position of the print stroke. “Driving Print Carriage to Front Limit” is displayed in the prompt box.
- Drive Carriage to Paste Position** Selecting this option moves the print carriage to a position that clears the paste dispense unit if operated. “Driving Print Carriage to Paste Position” is displayed in the prompt box.
- Drive Carriage to Rear Position** Selecting this option moves the print carriage to the end of the print stroke. “Driving Print Carriage to Rear Limit” is displayed in the prompt box.
- Drive Carriage Using Jog Buttons** Selecting this option allows the user to position the print carriage anywhere between the front and rear position using either of the two button safety switches located on the front of the machine. “Use the Left Jog Button to move Print Carriage towards front and the Right Jog Button to move it towards the rear” is displayed in the prompt box.
- Cycle Print Carriage** Selecting this option starts a continuous cycle of driving the print carriage between its front and rear limits pausing at the each end for 2 seconds. “Print Carriage Cycling” is displayed in the prompt box. The speed is measured and displayed. The cycle is terminated if the Stop key is used or that the set cycle count is reached.
- Cycle Count** This option displays the count when the module is being cycled.

PROFLOW

The ProFlow diagnostic module contains the following:



The menu bar changes to the following:

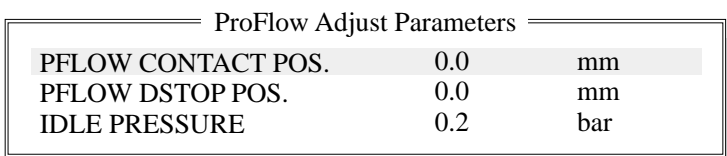
Run Diagnost	Adjust		Next	Previous			Exit
-----------------	--------	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:



The menu bar changes to the following:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Next/Previous keys move the highlight bar up and down the list of diagnostic parameters.

Incr./Decr. keys change the value of the selected diagnostic parameter.

Exit returns operation to the ProFlow diagnostics page.

Home ProFlow

Selecting this option drives the ProFlow unit up to the home position. If the downstop is in the way a warning is displayed.

Drive System to Contact Height	Selecting this option drives the ProFlow unit onto the screen, (a slight pressure seal, is made between the ProFlow transfer head and the screen). There is no pressure applied to the paste cassette.
Drive System to Printing Height	Selecting this option drives the ProFlow transfer head down to printing pressure (as setup in the Edit Data board file). There is no pressure applied to the paste cassette at this time.
Home Downstop	Selecting this option drives the downstop to home position (fully raised).
Drive Downstop to Position	Selecting this option drives the downstop to the preset downstop position (offset can also be adjusted in the status menu page by selecting Maint. and selecting Set Prefs menu).
Drive System Using Jog Buttons	Moves the ProFlow unit up or down by means of the jog buttons.
Drive Downstop Using Jog Buttons	Moves the downstop up or down by means of the jog buttons.
Toggle Paste Pressure	Initiates pressure onto the paste system. Before initiating pressure to the paste system, the transfer head must be in contact with, and have an adequate seal with the screen. A warning is displayed if toggle paste pressure is selected with the transfer head off the screen.
Pressure Reading	Continuously displays the current pressure in kg exerted from the squeegee pressure load cell onto the ProFlow unit.
ProFlow Fitted	Indication of electrical connection of ProFlow to the machine software.
Paste Cassette Low	ProFlow paste low sensor activated (on), indicating paste low or empty or, deactivated (off).
ProFlow Pressure Regulator Fitted	Switched to OFF indicates that the ProFlow unit is fitted with a mechanical pressure regulator control. Switched to ON indicates that the software addressable regulator control is activated, (ProFlow unit not fitted with mechanical pressure regulator).

SQUEEGEE

The Squeegee diagnostic module contains the following:

Home Front Squeegee
Home Rear Squeegee
Front Squeegee to Dwell Height
Rear Squeegee to Dwell Height
Rear Squeegee to Flood Height
Drive Front Squeegee Using Jog Buttons
Drive Rear Squeegee Using Jog Buttons
Pressure Reading. . . .kg

The menu bar changes to the following:

Run Diagnost			Next	Previous			Exit
-----------------	--	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Home Front Squeegee

Selecting this option drives the front squeegee upwards to its home position as detected by its home sensor.

Home Rear Squeegee

Selecting this option drives the rear squeegee upwards to its home position as detected by its home sensor.

Front Squeegee to Dwell Height

This option drives the front squeegee to a position 10mm clear of the top of the screen.

Rear Squeegee to Dwell Height

This option drives the rear squeegee to a position 10mm clear of the top of the screen.

Rear Squeegee to Flood Height

This option drives the rear squeegee to the height set by the flood reference height parameter.

Drive Front Squeegee Using Jog Buttons

Selecting this option enables the right jog button to drive the front squeegee up at slow speed and the left jog button drives it down, stopping immediately the button is released. “Use the two button controls to drive the Squeegee to front” is displayed in the prompt box.

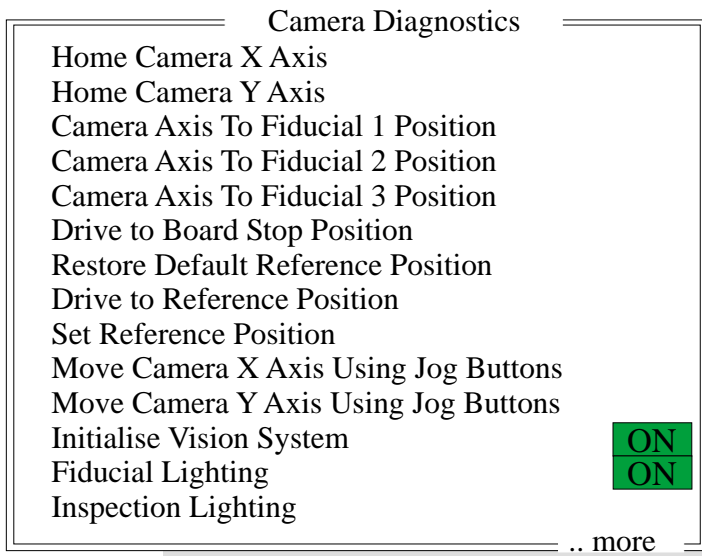
**Drive Rear
Squeegee Using
Jog Buttons**

Selecting this option enables the right jog button to drive the rear squeegee up at slow speed and the left jog button drives it down, stopping immediately the button is released. “Use the two button controls to drive the Squeegee to rear” is displayed in the prompt box.

Pressure Reading

This is a live display showing the actual pressure being applied to the squeegee. With no squeegee fitted the display should show a reading of approximately 3.6kg.

CAMERA AXES The Camera Axes diagnostic module contains the following:



The menu bar changes to the following:



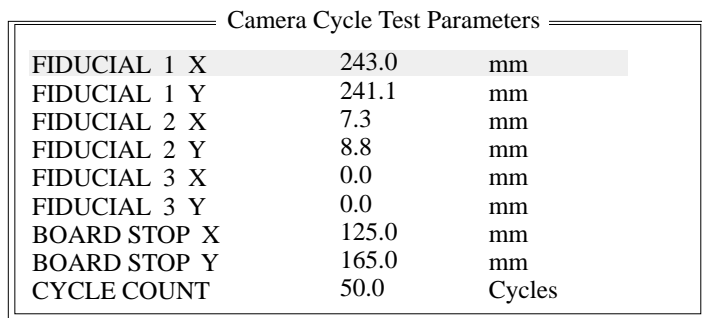
Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Fiducial Setup enables screen fiducials to be located.

Adjust opens the following window:



The menu bar changes to the following:



Next/Previous keys move the highlight bar up and down the list of diagnostic parameters.

Incr./Decr. keys change the value of the selected diagnostic parameter.

Exit returns operation to the camera axes diagnostics page.

NOTE

These parameters are used in diagnostics only and have no affect on the product board file.

Home Camera X Axis Selecting this option drives the Camera X carriage to find its datum position as determined by it's home sensor.

Home Camera Y Axis Selecting this option drives the Camera Y carriage to find its datum position as determined by it's home sensor.

Camera Axis to Fiducial 1 Position Selecting this option drives both X and Y carriages to the position set by the fiducial 1 X and Y coord parameters.

Camera Axis to Fiducial 2 Position Selecting this option drives both X and Y carriages to the position set by the fiducial 2 X and Y coord parameters.

Camera Axis to Fiducial 3 Position Selecting this option drives both X and Y carriages to the position set by the fiducial 3 X and Y coord parameters.

Drive to Board Stop Position Selecting this option drives both X and Y carriages to the position of the board stop for the current product.

Restore Default Reference Position Selecting this option restores the reference position stored as a default in software.

Drive to Reference Position Selecting this option enables drive to both X and Y carriages, to the position set by the camera X and Y reference parameters.

Set Reference Position Selecting this option alters the Printer Configuration file after the camera has been positioned so that it is viewing the reference mark on the front rail. On selection of this option the Menu Bar displays **Confirm**, pressing this key alters the printer configuration file. This is used in conjunction with Move camera X and Y axes.

Move Camera X Axis Using Jog Buttons Selecting this option enables the right jog button to drive the camera in the X axis to the left at slow speed and the left jog button drives the camera right, stopping immediately the button is released, (see Note).

NOTE

This is a physical movement of the camera, not as displayed on the monitor.

-
- Move Camera Y Axis Using Jog Buttons** Selecting this option enables the right jog button to drive the camera in the Y axis to the rear at slow speed and using the left jog button drives the camera forward, stopping immediately the button is released, (see Note above).
- Initialize Vision System** Selecting this option initializes the frame grabber board and it displays a live image on the vision monitor and a super-imposed box graphic.
- Cycle Camera System** Selecting this option starts a continuous cycle of driving the camera X and Y carriages to each of the following positions in sequence, dwelling for 2 seconds at each point, locating the fiducial at each fiducial position, displaying the returned location and repeating the cycle. The cycle is as follows:
1. Home
 2. Fiducial 1
 3. Fiducial 2
- If the data logging is enabled the fiducial co-ordinates are appended to C:\PRINTER\CAMERA.DAT file. This continuous cycle is terminated by selecting the stop key or when the set cycle count has been reached (50).
- Cycle count** Displays the count when the module is being cycled.

RAIL SYSTEM The Rail System diagnostic module contains the following:

Home Rail Width	
Drive Rail to Board Width	
Drive Rail Width using Two Button Control	
Drive Belts using Two Button Control	
Toggle Board Clamp	On/Off
Toggle Board Stop	On/Off
Cycle Board on Belts	
Cycle Board Clamp	
Cycle Rails	
Board Stop in Position	On/Off
Board at Stop	On/Off
Board at Left	On/Off
Board at Right	On/Off
Cycle Count	

The menu bar changes to the following:

Run Diagnost	Adjust		Next	Previous			Exit
-----------------	--------	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:

Rail System Test Parameters		
BOARD WIDTH	250.0	mm
CYCLE COUNT	50	Cycles

The menu bar changes to the following:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Next/Previous keys move the highlight bar up and down the list of diagnostic parameters.

Incr./Decr. keys change the value of the selected diagnostic parameter.

Exit returns operation to the rail system diagnostics page.

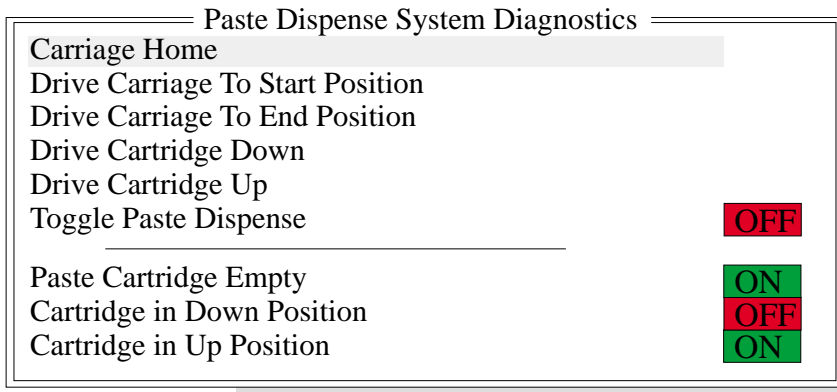
Home Rail Width	Selecting this option drives the rail width motor to find its datum position as determined by its home sensor.
Drive Rail to Board Width	Selecting this option drives the rail width motor to the width set by the board width parameter.
Drive Rail Width Using Two Button Control	Selecting this option enables the right jog button to drive the rail width motor forward at slow speed and the Left jog button to drive it back, stopping immediately the button is released.
Drive Belts Using Two Button Control	Selecting this option enables the Right Jog button to drive the belt motors to the right and the Left Jog button to drive them left, stopping immediately the button is released.
Toggle Board Clamp	Selecting this option alternately energises the Board Clamp displaying On status and de-energises it, displaying Off status.
Toggle Board Stop	Selecting this option alternately lowers and raises the board stop housed in the camera assembly, displaying On status when lowered and Off status when raised.
Cycle Board on Belts	Selecting this option starts a continuous cycle of driving the belts to the right until a board reaches the right board sensor, dwelling for 2 seconds and driving the belts left until a board reaches the left board sensor, dwelling for 2 seconds and repeating the cycle until stop is pressed or the set cycle count is reached (50).
Cycle Board Clamp	Selecting this option starts a continuous cycle of clamping and unclamping the board clamps. “Cycling Clamps...” is displayed in the prompt box.
Cycle Rails	Selecting this option drives the moveable rail from the home position to the minimum board width and back to the home position. “Cycling Rails...” is displayed in the prompt box.
Board Stop in Position	Continuously displays the current status of the board stop lowered position.
Board at Stop	Continuously displays the current status of the board at stop sensor.
Board at Left	Continuously displays the current status of the left board sensor. On is displayed if a board is detected on the rails at the left of the machine.

Board at Right Continuously displays the current status of the right board sensor. On is displayed if a board is detected on the rails at the right of the machine.

Cycle count Displays the count when the module is being cycled.

PASTE DISPENSE SYSTEM

The Paste Dispense System diagnostic module contains the following:



The menu bar changes to the following:



Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Carriage Home Drives the dispense carriage left to find its datum position as determined by its datum sensor.

Drive Carriage to Start Position Drives the paste carriage to the position set by the paste start parameter.

Drive Carriage to End Position Drives the paste carriage to the position set by the paste stop parameter.

Drive Cartridge Down Drives the cartridge tilt down until the cartridge away (down) sensor is detected.

Drive Cartridge Up Drives the cartridge tilt up until the cartridge home (up) sensor is detected.

Toggle Paste Dispense Alternately energizes the paste dispense, displaying On status and de-energizes displaying Off status.

Paste Cartridge Empty Continuously displays the current status of the cartridge empty sensor.

Cartridge in Down Position Continuously displays the current status of the cartridge away (down) sensor.

Cartridge in Up Position Continuously displays the current status of the cartridge home (up) sensor.

Drive X Rear Motor Using Jog Buttons Selecting this option enables the right Jog button to drive the X rear actuator right at slow speed and the left Jog button to drive it left, stopping immediately the button is released.

Drive Y Motor Using Jog Buttons Selecting this option enables the right Jog button to drive the Y actuator right at slow speed and the left Jog button to drive it left, stopping immediately the button is released.

Toggle Chase Clamp Selecting this option alternately energises the Chase Clamp solenoid, displaying On status and de-energise it, displaying Off status.

Cycle Alignment System Selecting this option starts a continuous cycle of driving the screen actuators to each of the following positions in sequence, dwelling for 2 seconds at each point and repeating the cycle.

The positions are given as XF, XR and Y in mm from datum and are as follows:

1	0, 0, 0.
2	+20, +10, +10.
3	0, 0, 0.
4	-20, -10, -10.
5	0, 0, 0.
6	+10, +20, -10.
7	0, 0, 0.
8	-10, -20, +10.

If data logging is enabled, every time the screen returns to 0,0,0, locate a screen fiducial and its co-ordinates appended to c:\PRINTER\SCREEN.DAT file. This continuous cycling is terminated by selecting the stop key or when the set cycle count has been reached (50).

Cycle Count This option displays the count when the module is being cycled.

SCREEN CHANGE (265GSX)

The 265GSX screen change diagnostics module contains the following.

Home Screen Motor	
Jog Screen Motor	
Toggle Coupling Right	On/Off
Toggle Coupling Left	On/Off
Toggle Drive Coupling	On/Off
Toggle Screen Clamps	On/Off
Load Screen	
Unload Screen	
Front Screen Sensor	On/Off
Centre Screen Sensor	On/Off
Rear Screen Sensor	On/Off
Exit Screen Sensor	On/Off
Safety Screen Sensor	On/Off
Drive Coupling Extended	On/Off

The menu bar changes to the following:

Run Diagnost			Next	Previous			Exit
-----------------	--	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Home Screen Motor Selecting this option drives the Screen Motor to find it's datum position as determined by it's home sensor.

Jog Screen Motor Selecting this option enables the Right Jog button to drive the screen motor forward and the Left Jog button to drive it back, stopping immediately the button is released.

Toggle Coupling Right Selecting this option alternately energizes the drive coupling right solenoid, displaying On status and de-energize it, displaying Off status.

Toggle Coupling Left Selecting this option alternately energizes the drive coupling left solenoid, displaying On status and de-energize it, displaying Off status.

Toggle Drive Coupling Selecting this option alternately energizes the drive couplings, displaying Out status and de-energize them displaying In status.

Toggle Screen Clamps	Selecting this option alternately energizes the Screen Clamps, displaying On status and de-energise them , displaying Off status.
Load Screen	Selecting this option performs a load screen cycle.
Unload Screen	Selecting this option performs an un-load screen cycle.
Front Screen Sensor	This continuously displays the current status of the front screen sensor.
Centre Screen Sensor	This continuously displays the current status of the centre screen sensor.
Rear Screen Sensor	This continuously displays the current status of the rear screen sensor.
Exit Screen Sensor	This continuously displays the current status of the sensor at the rear of the machine.
Safety Screen Sensor	This continuously displays the current status of the sensor at the front of the machine.
Drive Coupling Extended	This monitors and continuously displays that both drive couplings are fully extended.

SCREEN CHANGE (265Lt)

The 265Lt Screen Change diagnostic module contains the following:

Toggle Coupling Right	On/Off
Toggle Screen Clamps	On/Off
Clamp Screen	
Unclamp Screen	
Rear Screen Sensor	On/Off

The menu bar changes to the following:

Run Diagnost			Next	Previous			Exit
-----------------	--	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.
Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.
Exit returns operation to the module diagnostics page.

Toggle Coupling Right Selecting this option alternately energizes the drive coupling right solenoid, displaying On status and de-energise it, displaying Off status. Toggle Coupling Right has no function when the graduated scale and screen location blocks are fitted as the right drive coupling is removed.

Toggle Screen Clamps Selecting this option alternately energizes the Screen Clamps, displaying On status and de-energise them, displaying Off status.

Clamp Screen Selecting this option operates the right hand clamp, delays for one second, operates the top clamps, delays for one second and releases the right hand screen clamp.

Unclamp Screen Selecting this option ensures the right hand clamp is released and retracts the top clamps.

Rear Screen Sensor This continuously displays the current status of the rear screen sensor.

SCREEN CLEANER

Selecting this diagnostics module opens the following window:

Screen Cleaner Diagnostics			
Toggle Dry Wipe Blade			ON
Toggle Pinch Valve (if fitted)			ON
Toggle Paper Feed			ON
Toggle Vacuum			ON
Toggle Solvent Feed/Tank Press			ON
Toggle Screen Cleaner Home Clamp			ON
Cycle Pinch Valve			
Cycle Clean Blade			

Cleaner Paper Low/Advance			ON
Cleaner Solvent Low			ON
Pinch Valve Fitted			ON

Cycle Count	Done :-	0, To go :-	50

NOTE

Toggle Paper Feed and Cleaner Paper Low/Advance are not present when the Vortex under screen cleaner is fitted.

The menu bar changes to the following:

Run Diagnost	Adjust		Next	Previous			Exit
--------------	--------	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:

Cleaner Cycle Parameters		
CYCLE COUNT	50.0	Cycles

The menu bar changes to the following:

					Incr.	Decr.	Exit
--	--	--	--	--	-------	-------	------

Incr./Decr. keys change the value of the cycle count.

Exit returns operation to the screen cleaner diagnostics page.

Toggle Dry Wipe Blade

Selecting this diagnostic function lifts and lowers the cleaner body assembly, displaying On when the cleaner body assembly is lifted to the horizontal position and Off when the cleaner body assembly is lowered.

-
- Toggle Pinch Valve** Selecting this option alternately energizes the solvent valve displaying On status, and de-energizes the valve displaying Off status.
- Toggle Paper Feed** Selecting this diagnostic function alternately switches the paper feed motor on and off, displaying its current status. This function is not displayed if the Vortex under screen cleaner is fitted.
- Toggle Vacuum** Selecting this option alternately energizes the vacuum pump displaying On status, and de-energizes the pump displaying Off status.
- Toggle Vacuum Valve** Selecting this option alternately energizes the vacuum valve displaying On status, and de-energizes the valve displaying Off status.
- Toggle Solvent Feed /Tank Pressure** Selecting this option alternately energizes the pneumatic valve allowing air pressure to the tank displaying On status, and de-energizes the valve displaying Off status.
- Toggle Screen Cleaner Home Clamp** Selecting this option alternately energizes the home clamp electro-magnet displaying On status, and de-energizes the electro-magnet displaying Off status.
- Cycle Pinch Valve** Selecting this option continuously opens and closes the solvent valve for the number of cycles specified in the Adjust Page.
- Cycle Clean Blade** Selecting this option continuously raises and lowers the body assembly for the number of cycles specified in the Adjust Page.
- Cleaner Paper Low /Advance** This diagnostic function continuously displays the status of the cleaner paper low/advance sensor. This function is not displayed if the Vortex under screen cleaner is fitted.
- Cycle Vacuum Valve** Selecting this option continuously opens and closes the vacuum valve for the number of cycles specified in the Adjust Page.
- Cleaner Solvent Low** This option displays the cleaner solvent low sensor status.
- Pinch Valve Fitted** This option displays the solvent valve fitted status.
- Cycle Count** This option displays the cycles carried out and cycles to go.

RISING TABLE The Rising Table diagnostic module contains the following:

Rising Table Diagnostics	
Home Rising Table	
Raise Table to Vision Height	
Raise Table to Print Height	
Restore Default Heights	
Set Reference Vision Height	
Set Reference Print Height	
Drive Table using Jog Buttons	
Toggle Table Brake	OFF
Toggle Vacuum Tooling Valve	OFF
Cycle Rising Table	

Rail Lifted Left	OFF
Rail Lifted Right	OFF
Table at Home	ON
Cycle Count	

The menu bar changes to the following:

Run Diagnost	Adjust		Next	Previous			Exit
--------------	--------	--	------	----------	--	--	------

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:

Table Cycle Test Parameters		
CYCLE COUNT	50.0	Cycles

The menu bar changes to the following:

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	------

Next/Previous keys have no function in this application.

Incr./Decr. keys change the value of the cycle count.

Exit returns operation to the rising table diagnostics page.

Home Rising Table Selecting this option drives the rising table down until it reaches the datum position as indicated by its home sensor.

Raise Table to Vision Height Selecting this option drives the rising table to the height set by the vision height parameter.

Raise Table to Print Height Selecting this option first checks that both the camera carriage and the screen cleaner unit are home, if either are not at home the message “Home Camera and/or Screen Cleaner first” is displayed. If both are home, the rising table drives up to the height set by the print height parameter.

Restore Default Heights Selecting this option restores the vision height to the default of 50 mm and the print height to the default of 127 mm.

Set Reference Vision Height The function of this option is to set the rising table so that it views the board fiducials in focus. This is achieved by driving the table up or down while viewing the vision monitor until the fiducial is in focus. Pressing Calibrate Vision Height changes the menu Bar showing the option **Confirm**. Pressing Confirm sets the current height of the rising table, updating the printer configuration file.

Set Reference Print Height The function of this option is to set the print height so that no gap exists between the screen and board. This is achieved by driving the table up till the board clamp just touches the screen.

Selecting this option displays the following window and menu bar:

Table Print Height Calibration	
Print Height	128.6mm

Move		Set Height			Incr.	Decr.	Exit
------	--	------------	--	--	-------	-------	------

Selecting **Move** locks the lid bolt, moves the table to the height displayed, and unlocks the lid bolt.

Selecting **Exit** exits this menu without any changes.

Selecting the **Incr.** and **Decr.** buttons allows adjustment of the print height parameter:

Pressing **Set Height** changes the menu bar showing the option **Confirm**.

Confirm							Exit
---------	--	--	--	--	--	--	------

Pressing **Confirm** shows the following message, set the current height of the rising table and update the printer configuration file:

‘This will alter the printer configuration file - please confirm’

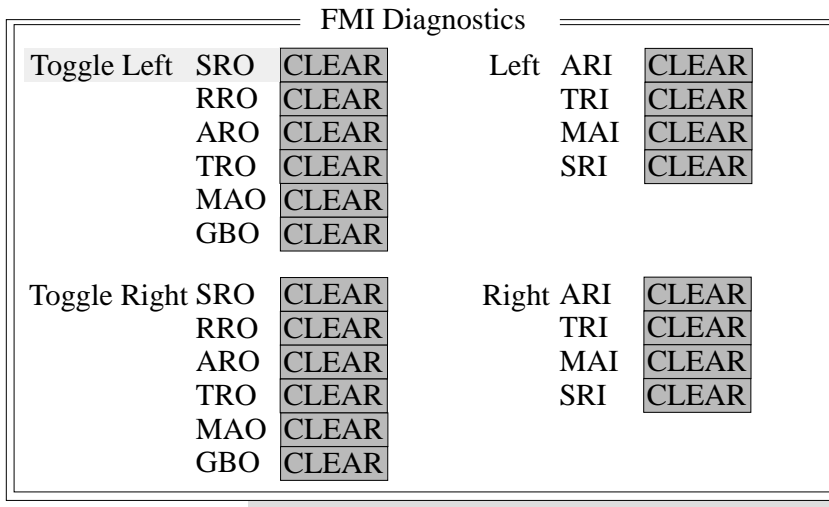
Pressing **Exit** returns to the previous menu without changes to the configuration file.

Drive Table using Jog Buttons Selecting this option enables the right jog button to drive the rising table up at slow speed and the left jog button drives the table down, stopping immediately the button is released.

- Toggle Table Brake** The brake fitted to the rising table can be toggled between on and off using this option. On is displayed when the brake is on.
- Toggle Vacuum Tooling Valve** Enables the vacuum tooling valve to be toggled between on and off to facilitate setup and maintenance.
- Cycle Rising Table** Selecting this option first checks that both the camera carriage and the screen cleaner unit are home, if either are not a message is displayed “Home Camera and/or Screen Cleaner first”. Only if both are home, a continuous cycle starts driving the rising table to print height, dwelling for 2 seconds, driving the table down to its datum height, dwelling for 2 seconds and repeating the cycle until stop is pressed or the set cycle count has been reached (50).
- Rail Lifted Left** Continuously displays the current status of the rail lifted left sensor. Off is displayed when the rail has been lifted.
- Rail Lifted Right** Continuously displays the current status of the rail lifted right sensor. Off is displayed when the rail has been lifted.
- Table at Home** Continuously displays the current status of the home interlock sensor, On is displayed when the rising table is in the home position.
- Cycle Count** Displays the count when the module is being cycled.

FOREIGN MACHINE INTERFACE

Selecting this diagnostics module opens the following window:



The menu bar changes to the following:



Toggle activates the diagnostic function, as selected by the highlight bar, switching between clear and set. Clear indicates that no signal is sent or received, set indicates that a signal is present.

Next/Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Exit returns operation to the module diagnostics page.

NOTE

This diagnostic can only be run when the machine is connected to an upline and downline machine.

Toggle Left SRO Selecting this diagnostic function sends a Send Request Out (SRO) signal to the upline machine.

Toggle Left RRO Selecting this diagnostic function sends a Receive Request Out (RRO) signal to the upline machine.

Toggle Left ARO Selecting this diagnostic function sends an Acknowledge Request Out (ARO) signal to the upline machine.

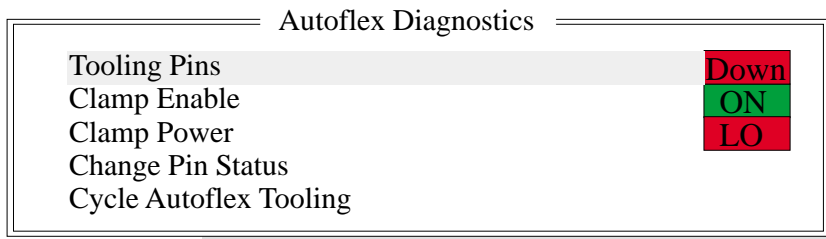
Toggle Left TRO Selecting this diagnostic function sends a Transfer Request Out (TRO) signal to the upline machine.

Toggle Left MAO Selecting this diagnostic function sends a Machine Available Out (MAO) signal to the upline machine.

Toggle Left GBO	Selecting this diagnostic function sends a Good Board Out (GBO) signal to the upline machine.
Toggle Right SRO	Selecting this diagnostic function sends a Send Request Out (SRO) signal to the downline machine.
Toggle Right RRO	Selecting this diagnostic function sends a Receive Request Out (RRO) signal to the downline machine.
Toggle Right ARO	Selecting this diagnostic function sends an Acknowledge Request Out (ARO) signal to the downline machine.
Toggle Right TRO	Selecting this diagnostic function sends a Transfer Request Out (TRO) signal to the downline machine.
Toggle Right MAO	Selecting this diagnostic function sends a Machine Available Out (MAO) signal to the downline machine.
Toggle Right GBO	Selecting this diagnostic function sends a Good Board Out (GBO) signal to the downline machine.
Left ARI	This diagnostic function continuously displays whether the upline machine is sending an Acknowledge Request In (ARI) signal.
Left TRI	This diagnostic function continuously displays whether the upline machine is sending a Transfer Request In (TRI) signal.
Left MAI	This diagnostic function continuously displays whether the upline machine is sending a Machine Available In (MAI) signal.
Left SRI	This diagnostic function continuously displays whether the upline machine is sending a Send Request In (SRI) signal.
Right ARI	This diagnostic function continuously displays whether the downline machine is sending an Acknowledge Request In (ARI) signal.
Right TRI	This diagnostic function continuously displays whether the downline machine is sending a Transfer Request In (TRI) signal.
Right MAI	This diagnostic function continuously displays whether the downline machine is sending a Machine Available In (MAI) signal.
Right SRI	This diagnostic function continuously displays whether the downline machine is sending a Send Request In (SRI) signal.

AUTOFLEX TOOLING (STANDARD)

Selecting this diagnostics module opens the following window:



The menu bar changes displaying the following:

Run Diagnost			Next	Previous			Exit
-----------------	--	--	------	----------	--	--	------

Next / Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Exit returns operation to the module diagnostics page.

Tooling Pins

Selecting this diagnostic function alternately lifts and lowers all the pins, continuously displaying the current status.

Clamp Enable

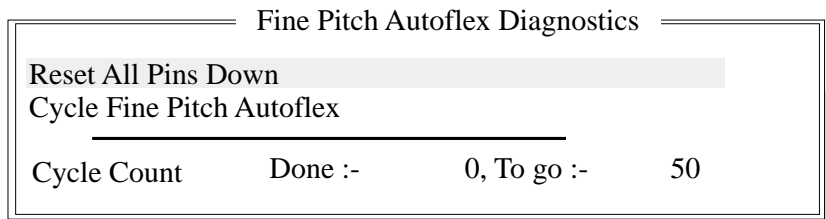
Selecting this diagnostic function alternately switches the electro-magnet clamps on or off, continuously displaying the current status. Any pins that are up when the clamp is switched off automatically lower.

Clamp Power

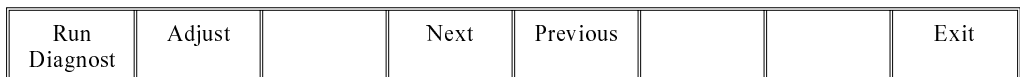
Selecting this diagnostic function alternately switches the power through the electro-magnetic coils between high and low, continuously displaying the current status.

AUTOFLEX TOOLING (FINE PITCH)

Selecting this diagnostics module opens the following window:



The menu bar changes displaying the following:

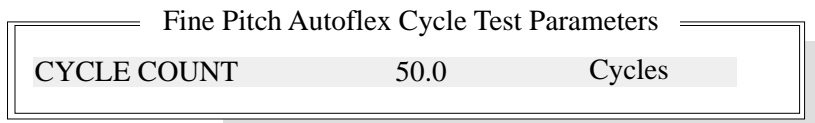


Next / Previous keys move the highlight bar up and down the list of selectable diagnostic functions.

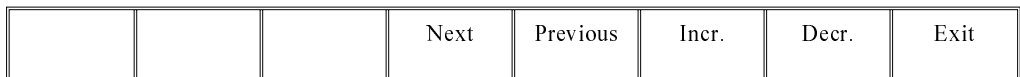
Run Diagnost activates the diagnostic function, as selected by the highlight bar.

Exit returns operation to the module diagnostics page.

Adjust opens the following window:



The menu bar changes displaying the following:



Next / Previous keys have no function in this application.

Incr. / Decr. keys change the value of the cycle count.

Exit returns operation to the fine pitch autoflex diagnostics page.

Reset All Pins Down This diagnostic function retracts all the pins and resets the ToolMove cards.

Cycle Fine Pitch Autoflex This diagnostic function exercises ToolMove card #1 first and ToolMove card #2 second, for each of the currently selected number of cycles, raising the pins one at a time until they are all up and lowering them all together before moving on to the next cycle.

Cycle Count This diagnostic function displays the amount of cycles done and the amount of cycles to go to complete the cycle count.



265GSX
265Lt

CHAPTER 6

MONITOR

MONITOR

INTRODUCTION The Monitor function allows for the setting of the following functions:

- Log On
- Host Comms
- Clear Batch
- Batch Limit
- Perform Display
- Event Display
- System Disable

To access the monitor functions proceed as follows:

Select the **Monitor** button from the run menu.

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	----------------	--------

The menu bar displays the following options:

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	-----------------	---------------	----------------	------

LOG ON/OFF

Log On

This function identifies the user of the machine. To log on to the machine proceed as follows:

1. Select **Log On**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
---------------	------------	-------------	-------------	-----------------	---------------	----------------	------

The Operator Log On window is displayed as follows:

Operator Log On
Enter Operator ID:

2. Using the keyboard enter the operator's name/ID and press **Enter**, the operator's name/ID appears on the status page.
3. Select **Exit**.

Log Off	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
---------	------------	-------------	-------------	-----------------	---------------	----------------	-------------

Log Off

To log off from the machine proceed as follows:

1. Select **Log Off**.

Log Off	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
----------------	------------	-------------	-------------	-----------------	---------------	----------------	------

2. The operator's name/ID is removed from the status page and the menu bar changes to the following:

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	-----------------	---------------	----------------	------



265GSX
265Lt

HOST COMMS

For information on the Host Comms function see the Host Communications Chapter.

CLEAR BATCH

Allows the user to reset cycle time, batch count, board count and throughput information on the status page. To reset the batch proceed as follows:

1. Press **Monitor**.

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	----------------	--------

2. Press **Clear Batch**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	--------------------	-------------	-----------------	---------------	----------------	------

3. Press **Exit**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	-----------------	---------------	----------------	-------------

BATCH LIMIT

To set the batch limit proceed as follows:

1. Select **Batch Limit**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	--------------------	-----------------	---------------	----------------	------

The Batch Count Limit window is displayed as follows:

Batch Count Limit	
Batch Limit	0

2. Using the **Incr.** and **Decr.** keys as required set the batch limit.

					Incr.	Decr.	Exit
--	--	--	--	--	--------------	--------------	------

3. Select **Exit**.

					Incr.	Decr.	Exit
--	--	--	--	--	-------	-------	-------------

PERFORM DISPLAY

Displays machine performance information in a tabular format. To view the performance information proceed as follows:

1. Select **Perform Display**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	------------------------	---------------	----------------	------

The Performance Information window is displayed as follows:

Performance Information			
Current Status : Wait			
	Batch	Session	Total
Board Count	0	0	1786
Start Time	09:17:54	09:15:54	
Wait Time	0:00:00	0:00:00	2:14:24
Run Time	0:00:00	0:00:00	18:43:41
Setup Time	0:00:00	0:00:00	0:31:32
Down Time	0:00:00	0:00:00	22:07:46
Recovery Time	0:00:00	0:01:37	0:26:05
Maintenance Time	0:00:00	0:01:32	22:10:19

2. Select **Exit**.

							Exit
--	--	--	--	--	--	--	-------------

EVENT DISPLAY Displays the machine event record in a tabular format. To view the event record proceed as follows:

1. Select **Event Display**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
--------	------------	-------------	-------------	-----------------	----------------------	----------------	------

The Event Record window is displayed as follows:

Event Record			
Date	Time		Event
05/09/97	11:08:58	31252	Line Power Off
05/09/97	11:11:02	31251	Line Power On
05/09/97	11:11:37	31259	Paste Cartridge empty
05/09/97	11:13:31	31269	Screen Loaded
05/09/97	11:13:52	31255	Printer Ready
05/09/97	11:14:36	31273	Clear Batch Count
05/09/97	11:16:12	31275	Cover Closed
05/09/97	11:16:45	31279	Setup Ended
05/09/97	11:17:01	31281	System Power On
05/09/97	11:17:59	31289	Clear Batch Count

2. Select **Latest** to access latest machine events.

Select **Next** to access later machine events.

Select **Previous** to access earlier machine events.

Latest			Next	Previous			Exit
---------------	--	--	-------------	-----------------	--	--	------

3. Select **Exit**.

Latest			Next	Previous			Exit
--------	--	--	------	----------	--	--	-------------

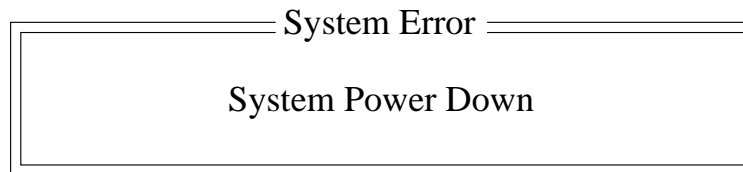
SYSTEM DISABLE

To disable the system software proceed as follows:

1. Select **System Disable**.

Log On	Host Comms	Clear Batch	Batch Limit	Perform Display	Event Display	System Disable	Exit
-----------	---------------	----------------	----------------	--------------------	------------------	---------------------------	------

The System Error window is displayed as follows:



2. Press the **System** button to re-initiate the system.



265GSX
265Lt

CHAPTER 7

HOUSE KEEPING

HOUSE KEEPING

INTRODUCTION The Housekeeping system enables the user to manipulate data from the local drive, floppy drive and network drives whilst remaining within the software environment, thus alleviating the requirement to use DOS.

Housekeeping allows the user to copy, print and delete files, and also to set the time and date on the machine.

To access the housekeeping options select the **Maint.** Button.

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	------------	--------------	--------	-------	---------	---------------

Select the **House Keeping** button.

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	----------------------	-----------	----------	-------------	------

The menu bar displays the following options:

Set Date	Set Time	Print Data	Copy Data		Delete Data		Exit
----------	----------	------------	-----------	--	-------------	--	------

SET DATE

The Set Date option allows the user to set the current date on the machine.

On selecting Set Date the following window is displayed:

Change date page		
Year	:	1997
Month	:	11
Day	:	10

The menu bar changes to the following:

	Set		Next	Previous	Incr.	Decr.	Exit
--	-----	--	------	----------	-------	-------	------

The **Next** and **Previous** keys move the cursor between the three parameters.

The **Incr. and Decr.** keys change the value of the highlighted parameter.

The **Set** key sets the newly entered figure, as shown in the title window on the status page.

The **Exit** key returns to the previous menu. Pressing **Exit** without pressing **Set** returns the machine to the previous date.

SET TIME

The Set Time option allows the user to set the current time on the machine.

On selecting Set Time the following window is displayed:

Change time page		
Hour	:	15
Minute	:	25
Second	:	45

The menu bar changes to the following:

	Set		Next	Previous	Incr.	Decr.	Exit
--	-----	--	------	----------	-------	-------	------

The **Next** and **Previous** keys move the cursor between the three parameters.

The **Incr. and Decr.** keys change the value of the highlighted parameter.

The **Set** key sets the newly entered figure, as shown in the title window on the status page.

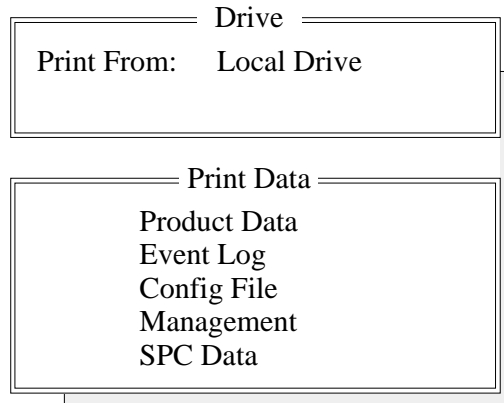
The **Exit** key returns to the previous menu. Pressing **Exit** without pressing **Set** returns the machine to the previous time.

PRINT DATA

The Print Data option allows the user to output the following data to the local printer or to a disk in the machines floppy drive:

Data Option	File Output (as.PRN files)
Product Data	Chosen Product Data File
Event Log	EVENT.DAT
Config Data	CONFIG.TXT
Manage Data	MANINF.DAT
SPC Data	READINGS.DEK

On selecting Print Data the following window is displayed:



The menu bar changes to the following:

Print Printer	Print File		Up	Down			Exit
------------------	---------------	--	----	------	--	--	------

The **Print Printer** key prints the chosen file to the local printer, if Product Data is highlighted a further window and menu bar open to allow the user to select the required product data file (see next page).

The **Print File** key outputs the print file to the machines floppy drive, the file has a .PRN extension. If Product Data is highlighted a further window and menu bar open to allow the user to select the required product data file (see next page).

The **Up** and **Down** keys move the cursor between the data file types.

The **Exit** key returns to the previous menu bar.

If the **Print Printer** or **Print File** keys are pressed when Product Data is highlighted the following window is displayed:

Print Data File	
265TEST1 CALIBRA DEFAULT	
Search 265TEST1	Product ID 265TEST1-

The menu bar changes to the following:

Print Printer	Print Data		Left	Right	Up	Down	Exit
------------------	---------------	--	------	-------	----	------	------

The **Left** and **Right** keys move between columns (if displayed).

The **Up** and **Down** keys move vertically through the files.

Exit returns to the housekeeping display without any other action.

Print Printer outputs the Product File to the local printer.

Print File outputs the Product File to the machines floppy drive, the file has a .PRN extension.

COPY DATA

The Copy Data function allows the operator to copy data between the local hard drive, local drive and network drives.

On selecting Copy Data the following window is displayed:

Drive	
Copy From:	Floppy Drive
Copy To:	Local Drive

Copy Data
Product Data
Event Log
Test Data
SPC Data
Config Data
Service Data
Deviation Data
Image Data

NOTE

Image Data is only available on machines with 2D Inspection. Deviation Data is only available on machines with Tooling Monitoring authorized.

The menu bar changes to the following:

Copy Data		Copy All	Up	Down	From Disk	To Disk	Exit
-----------	--	----------	----	------	-----------	---------	------

NOTE

Copy All is only available when Product Data is highlighted.

The **Up** and **Down** keys move the cursor between the various data types.

The **From Disk** key allows selection of the disk to copy from, options are:

Local Drive; Floppy Drive; Network Drive.

The **To Disk** key allows selection of the disk to be copied to, options are:

Local Drive; Floppy Drive; Network Drive.

The **Exit** key returns to the previous menu.

The function of the **Copy Data** key depends upon the data type selected. If Event Log, Test Data, Config Data, Service Data, Deviation Data or SPC Data are selected the files are transferred directly from the source to the destination and no further options are given.

NOTE

Copying Config Data copies the following files:

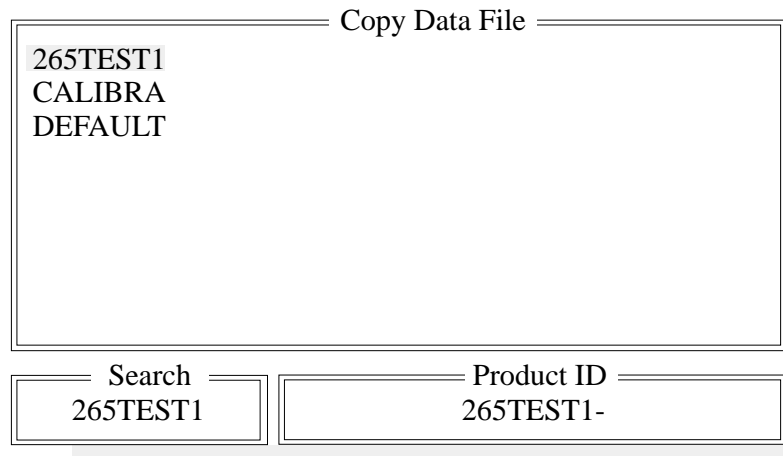
- CALIB.INI
- CONFIG.CFG

These files are required if a Windows NT recovery procedure is required on the machine.

The file names under each item are as follows:

Event Log	Test Data	SPC Data	Config Data	Service Data	Deviation Data
event.dat	atest.dat	readings.dek	calib.ini	service.dat	deviate.dat
	fiducial.dat		config.cfg	replen.dat	
	inspect.dat		maint.dat		
	location.dat		config.txt		
	offset.dat				
	test.dat				
	test.log				
	theta.dat				
	videoxy.dat				

If the **Copy Data** key is pressed when Product Data is highlighted, the message **‘Do you also want to create a copy of the inspection data?’** is displayed. The following window is displayed:



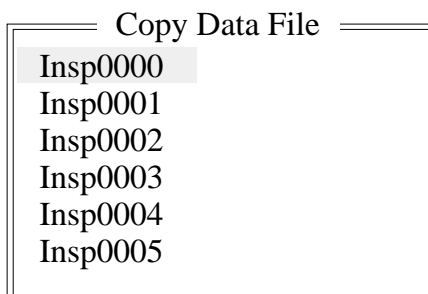
The menu bar changes to the following:

Yes							No
-----	--	--	--	--	--	--	----

The **Yes** key copies the highlighted product data file between the drives as indicated, with all the inspection data that is associated with it. The message **‘Copying All Files Please Wait’** is displayed.

The **No** key copies the highlighted product data file between the drives as indicated, without the inspection data that is associated with it. The message **‘Copying All Files Please Wait’** is displayed.

If the **Copy Data** key is pressed when Image Data is highlighted, the following window is displayed:



The menu bar changes to the following:

Copy File			Left	Right	Up	Down	Exit
-----------	--	--	------	-------	----	------	------

The **Copy File** key copies the selected product data file from the source to the destination.

The **Left** and **Right** keys move the cursor between product file columns (if displayed).

The **Up** and **Down** keys move the cursor between the various product data files.

The **Exit** key returns to the previous menu.

If the **Copy All** key is pressed when Product Data is highlighted, the message **‘Do you also want to create a copy of the inspection data associated with each process program that is to be copied?’** is displayed. The menu bar changes to the following:

Yes							No
-----	--	--	--	--	--	--	----

The **Yes** key copies all the product data files between the drives as indicated, with all the inspection data that is associated with them. The message **‘Copying All Files Please Wait’** is displayed.

The **No** key copies all the product data files between the drives as indicated, without the inspection data that is associated with them. The message **‘Copying All Files Please Wait’** is displayed.

DELETE DATA The Delete Data function allows the operator to delete various data types.

On selecting the Delete Data key the following window is displayed:

Drive
Delete From: Local Drive

Delete Data
Product Data
Event Log
Test Data
SPC Data
Config Data
Service Data
Deviation Data
Image Data

NOTE

Image Data is available with 2D Inspection only. Deviation Data is only available on machines with Tooling Monitoring authorized.

The menu bar changes to the following:

Delete Data			Up	Down			Exit
-------------	--	--	----	------	--	--	------

The **Up** and **Down** keys move the cursor through the data types.

The function of the Delete Data option depends on the type of data selected, the options are:

Product Data; Event Log; Test Data; SPC Data; Config Data; Service Data; Deviation Data; Image Data

Product Data

If the **Delete Data** key is pressed when Product Data is highlighted the following window is displayed:

Delete Data File	
265TEST1 CALIBRA DEFAULT	
Search 265TEST1	Product ID 265TEST1-

The menu bar changes to the following:

Delete			Left	Right	Up	Down	Exit
--------	--	--	------	-------	----	------	------

The **Left** and **Right** keys move the cursor between columns of Product Data Files.

The **Up** and **Down** keys move the cursor between the Product Data Files.

The **Exit** key returns to the previous menu.

On pressing the **Delete** key, the message **Confirm deletion of selected product data** is displayed in the message prompt box, asking the user to confirm the deletion request, the menu bar changes displaying the **Yes** and **No** options:

Yes							No
-----	--	--	--	--	--	--	----

Event Log

When the Event Log is highlighted, the menu bar changes to the following:

Delete All	Delete Date	Delete Number	Up	Down			Exit
------------	-------------	---------------	----	------	--	--	------

On pressing the **Delete All** key, the message **Confirm deletion of All Event Data** is displayed in the message prompt box, asking the user to confirm the deletion request, the menu bar changes displaying the **Yes** and **No** options.

Yes							No
-----	--	--	--	--	--	--	----

On pressing the **Delete Date** key the following window is displayed:

<p>Delete event to date</p> <p>Delete all event records prior to : Fri Dec 18 1998</p>
--

The menu bar changes to the following:

Delete					Incr.	Decr.	Exit
--------	--	--	--	--	-------	-------	------

The **Incr.** and **Decr.** keys change the highlighted date.

The **Delete** key deletes all event files prior to the indicated date, the message **Deleting Events...** is displayed in the message prompt box.

The **Exit** key returns to the previous menu.

On pressing the **Delete Number** key the following window is displayed:

Delete event by number
Delete all event records except the most recent :
1

The menu bar changes to the following:

Delete					Incr.	Decr.	Exit
--------	--	--	--	--	-------	-------	------

The **Incr.** and **Decr.** keys change the highlighted number.

The **Delete** key deletes all event files prior to the indicated number, the message **Deleting Events...** is displayed in the message prompt box.

The **Exit** key returns to the previous menu.

Test Data

If the **Delete Data** key is pressed when Test Data is highlighted, the message **Confirm deletion of Test Data** is displayed in the message prompt box, asking the user to confirm the deletion request, the menu bar changes displaying the **Yes** and **No** options.

Yes							No
-----	--	--	--	--	--	--	----

SPC Data

If the **Delete Data** key is pressed when SPC Data is highlighted, the message **Confirm deletion of SPC Data** is displayed in the message prompt box, asking the user to confirm the deletion request, the menu bar changes displaying the **Yes** and **No** options.

Yes							No
-----	--	--	--	--	--	--	----

Image Data

If the **Delete Data** key is pressed when Image Data is highlighted the following window is displayed:

Delete Data File
10000001
10000002
10000003
10000004
10000005
10000006

The menu bar changes to the following:

Delete	Rebuild List		Left	Right	Up	Down	Exit
--------	-----------------	--	------	-------	----	------	------

The **Rebuild List** key updates the list of image files. This is used mainly with host comms, where the host computer may have a more up to date list.

The **Left** and **Right** keys move the cursor between columns (if displayed).

The **Up** and **Down** keys move the cursor between the various image files.

The **Delete** key deletes the highlighted image file.

The **Exit** key returns to the previous menu.

Deviation Data

If the **Delete Data** key is pressed when Deviation Data is highlighted, the message **Confirm deletion of Deviation Data** is displayed in the message prompt box, asking the user to confirm the deletion request, the menu bar changes displaying the **Yes** and **No** options.

Yes							No
-----	--	--	--	--	--	--	----



265GSX
265Lt

CHAPTER 8

2Di INSPECTION

2Di INSPECTION

MODULE OVERVIEW

Introduction

The vision system of the screen printing machine is used to both align the screen to each board before it is printed and, when enabled, inspect the screen and board. This module describes how this is achieved.

Purpose

2D inspection (2Di) ensures the quality of the print by monitoring the printing process, to determine when a screen clean or paste dispense is required and if licensed and selected, to warn for bridging, misalignment and reduced paste volume. 2Di optimizes the cycle time by eliminating unnecessary screen cleaning and paste dispensing operations. To achieve this the system inspects various areas of the board and/or screen (sites) to detect the following:

- Screen Blockage - solder paste remaining inside screen apertures.
- Screen Smear - solder paste on the screen.
- Board: Paste Present - amount of the pad covered by solder paste, as a % of the aperture size.
- Board: Alignment - accuracy of paste positioning compared to the learnt site image.
- Board: Bridging - distance between adjacent deposits of paste.

Using the screen aperture, blockage and paste present information the system can calculate the following:

- Board: Paste Volume - volume of paste on the pad.

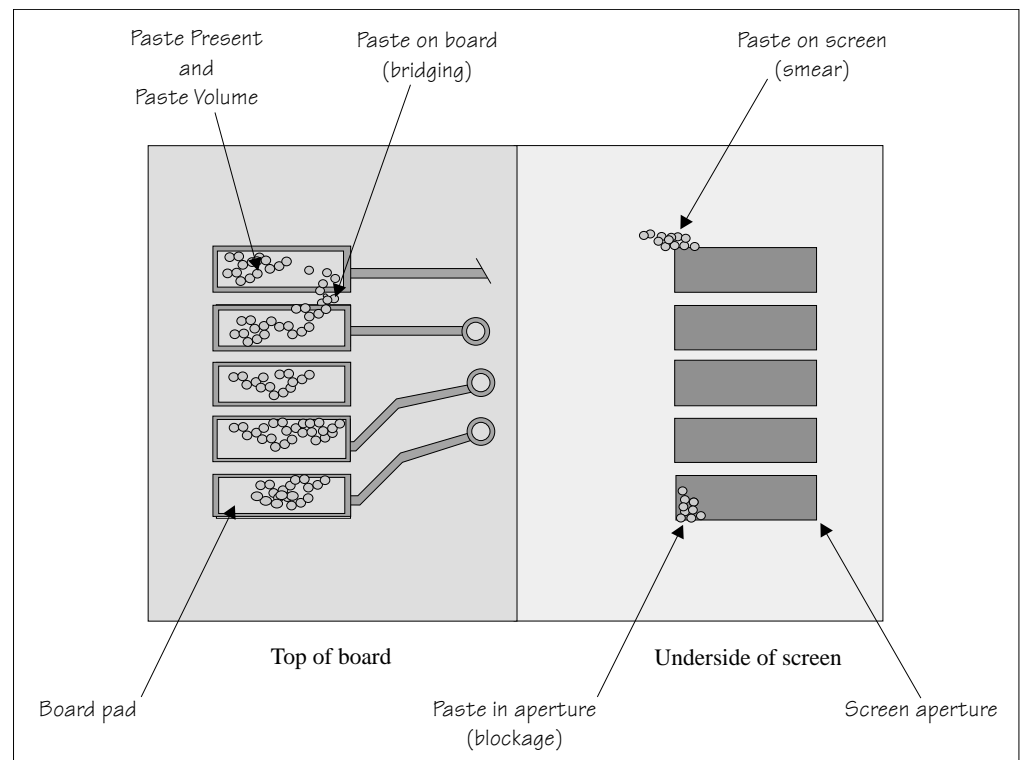


Figure 8-1 Paste on Board and Screen

Operation

A Board Inspection Type and a Screen Inspection Type sets the level of inspection for the board and screen. The following types of inspection are available:

- None
- Basic
- Advanced

Inspection of the board and screen is licensed as a separate feature for each, and specifies the maximum level of inspection that may be selected, as follows:

	None	Basic	Advanced
Board	No Inspection	Paste on Pad	Basic + Bridging and Alignment
Screen	No Inspection	Blockage	Basic + Smear

An item only appears in a window while it is appropriate to the current level of inspection. In particular Paste Volume is only calculated and displayed while the level of inspection is advanced for both the board and the screen.

Inspection is achieved by image comparison. Prior to printing, an inspection of the various sites is carried out on the board only, and the image is captured.

This captured image, called a Pre-image is always taken as a set, so that each set comprises a pre-image of the board at every inspection site. The set may be taken for just the first board in a batch and applied throughout the batch (Pre-image set to 1), or a fresh set may be taken as each board is received for printing (Pre-image set to Every).

Regardless of the setting of Pre-image, the set always comprises all the current inspection sites. No provision is made to enable individual sites to be selected or excluded.

Screen Inspection The various screen inspections are shown below.

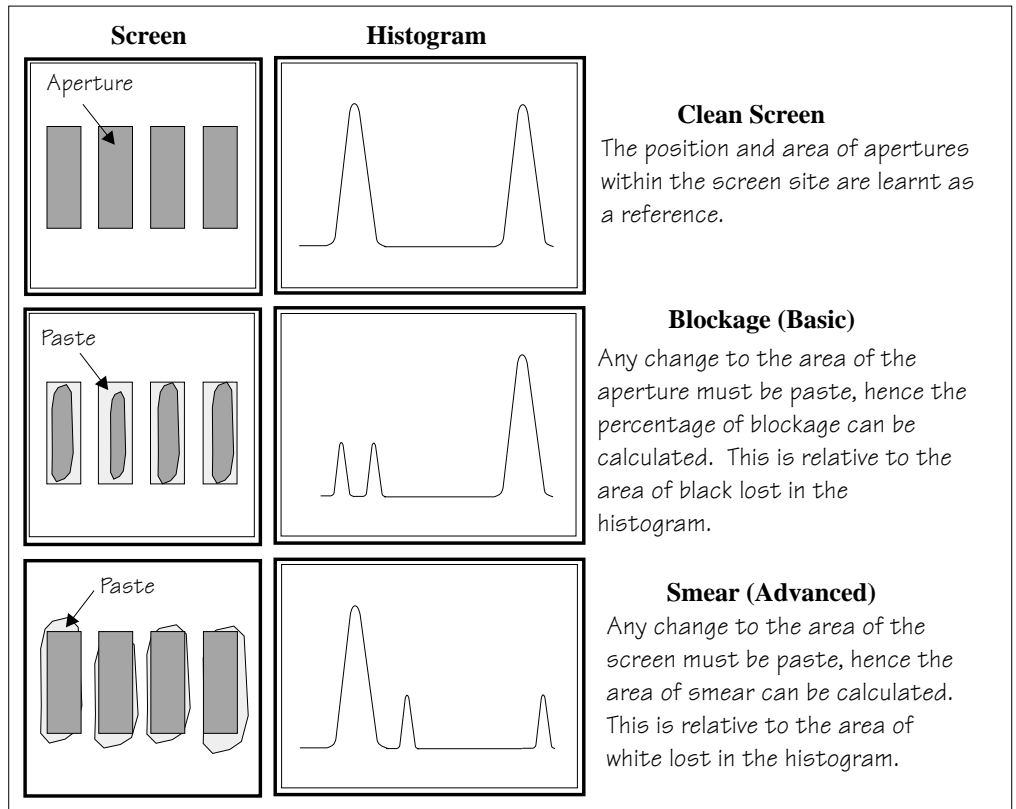


Figure 8-2 Screen Inspection

Board Inspection The various board inspections are shown below.

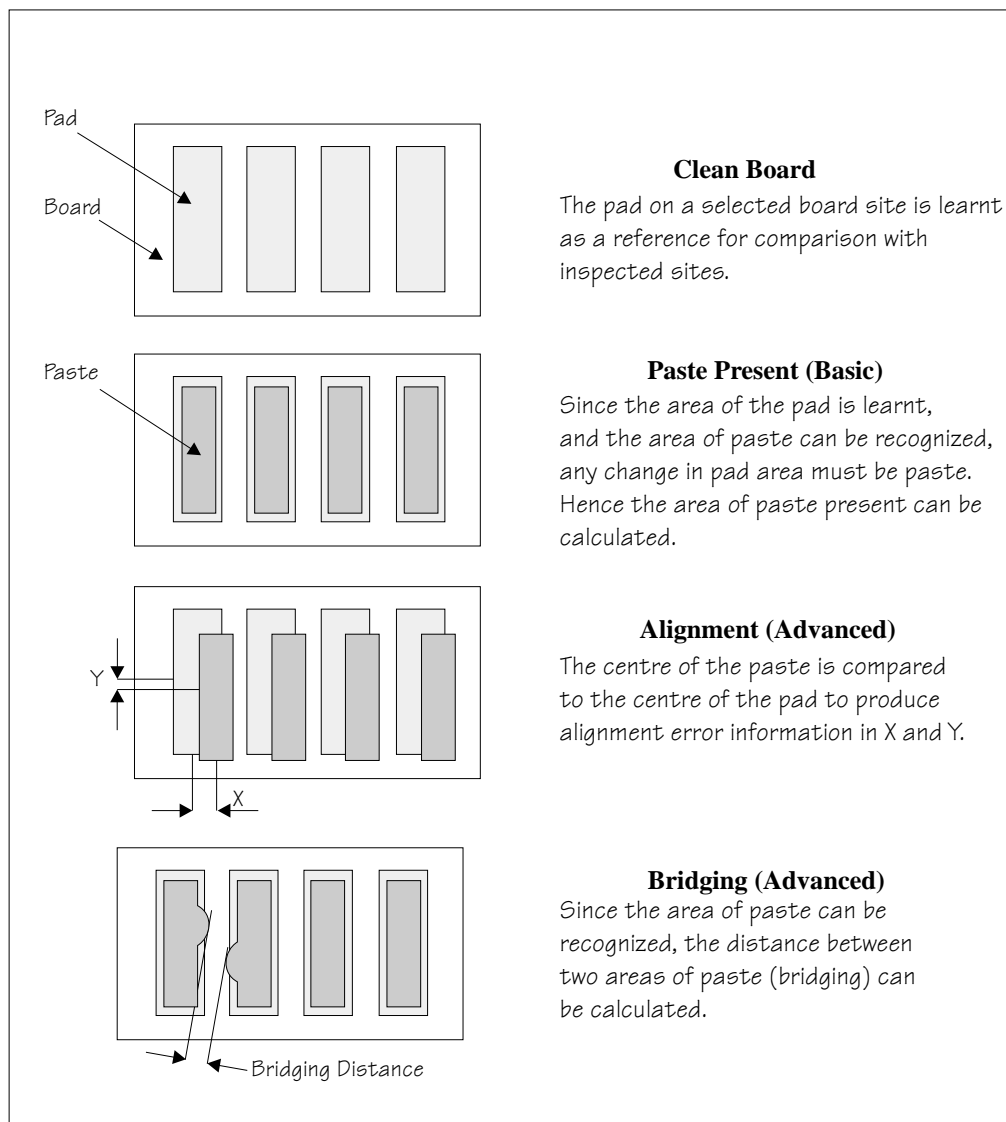


Figure 8-3 Board Inspection

NOTE

Uneven tinning of the board and/or misaligned soldermask can be seen as paste, which can cause false readings. This can be eliminated with the correct lighting setup.

Shapes

The inspection system uses shape recognition to inspect shapes other than rectangles. A number of features can be inspected in one inspection, ie a row or column of pads/apertures or a combination of features.

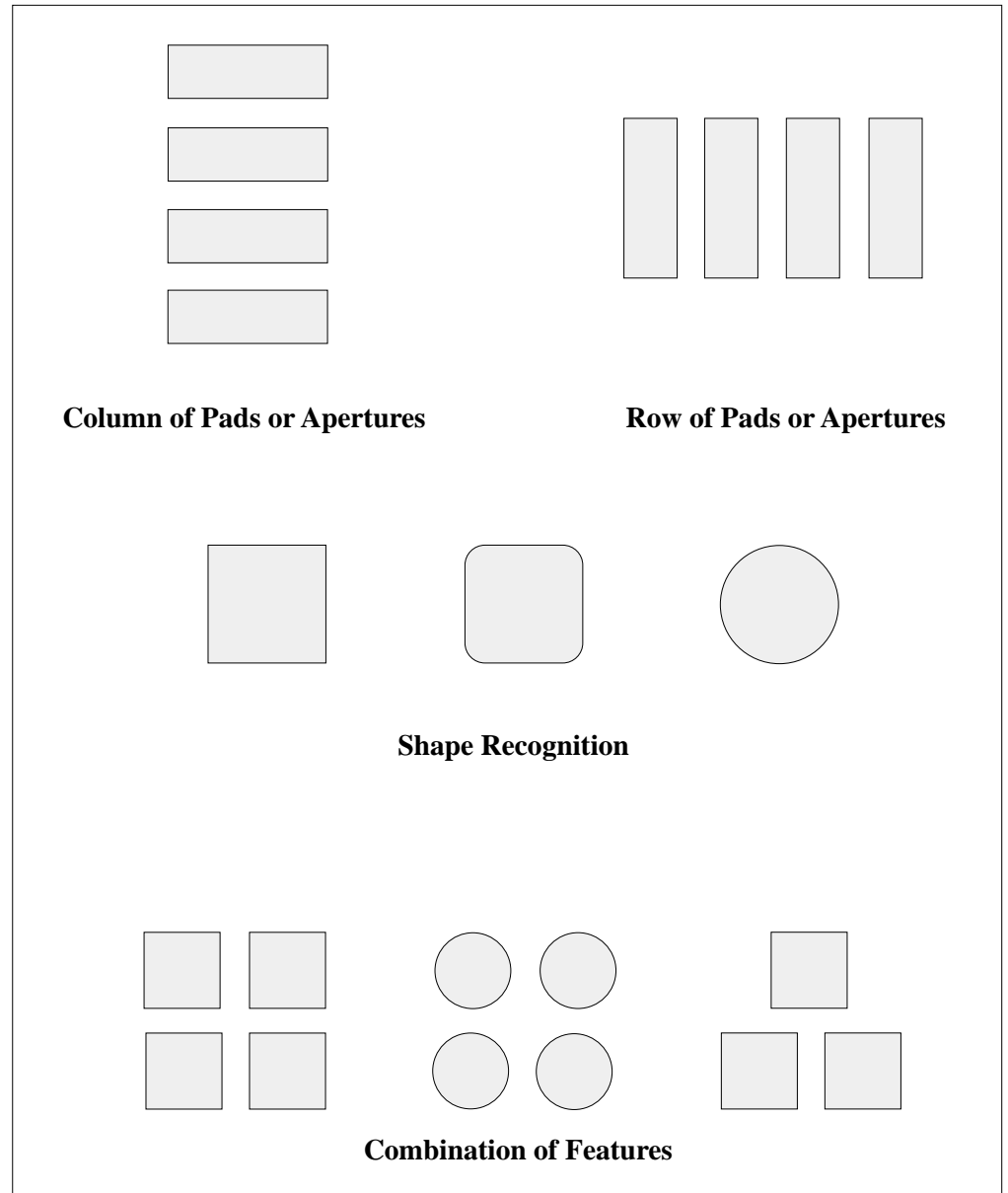


Figure 8-4 Shape Types

Shape Recognition To recognize shapes other than rectangles the inspection system counts the pixels within the box graphic. By identifying which pixels have similar grey scale levels, the system can distinguish between board and pad. An example of how this is achieved is given below.

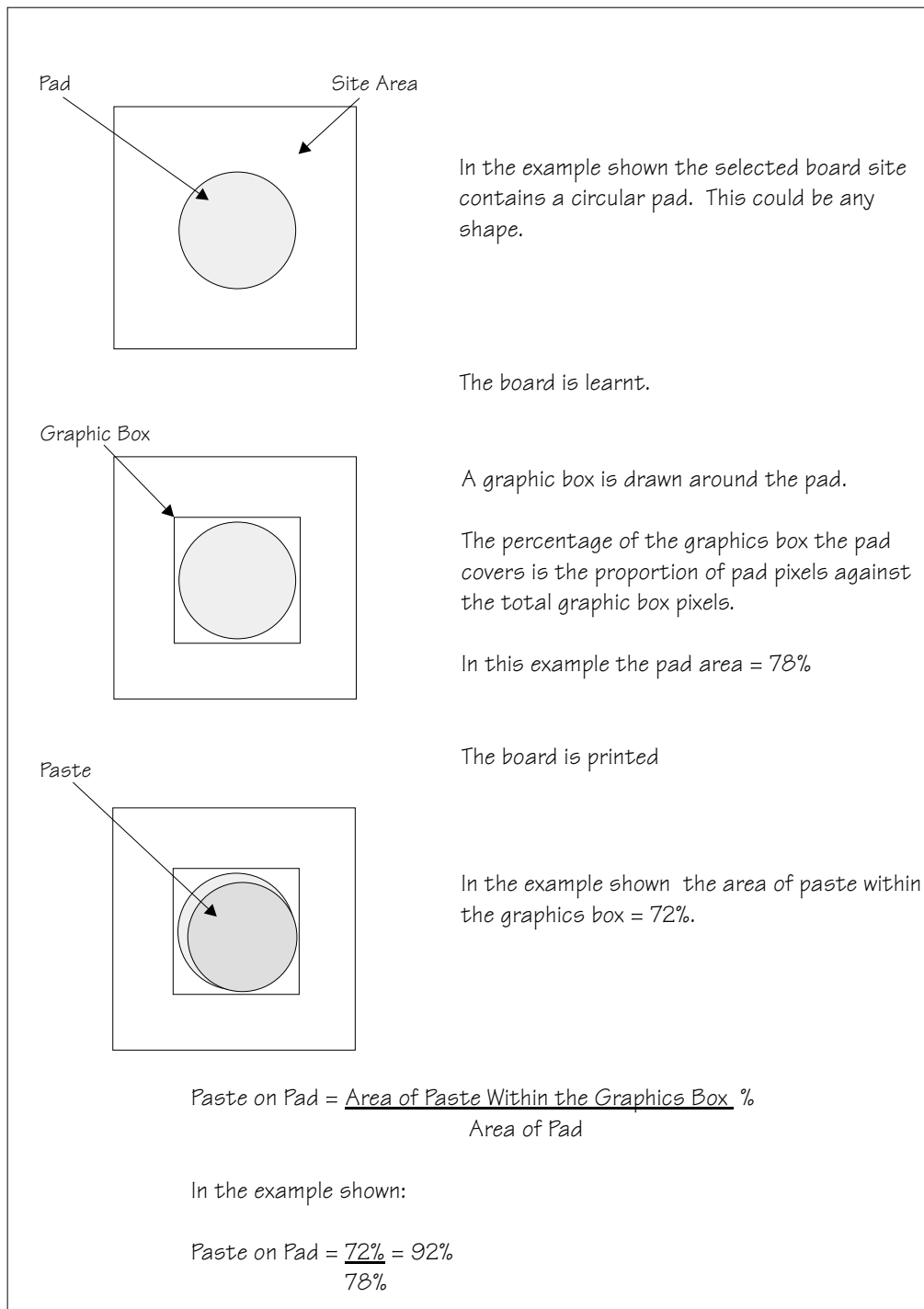


Figure 8-5 Shape Recognition

Paste Volume Prediction

2Di uses blockage and paste on pad inspection results for a site to predict the volume of paste on a pad, this is only available while the level of inspection is set to advanced for both the board and screen. An example of how this is achieved is given below.

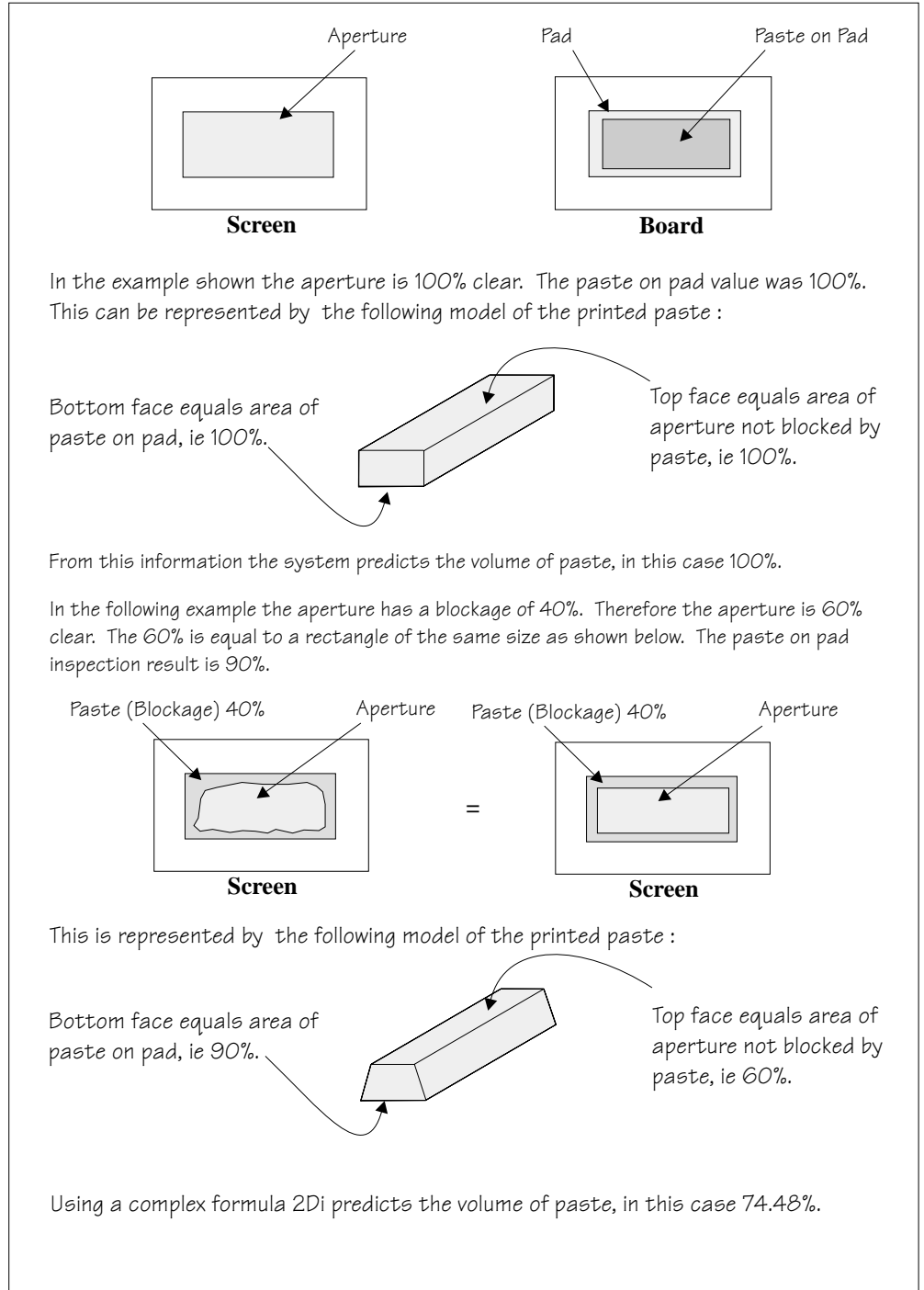


Figure 8-6 Paste Volume Prediction

Auto Learn

2Di inspection can automatically learn different types of features as shown below.

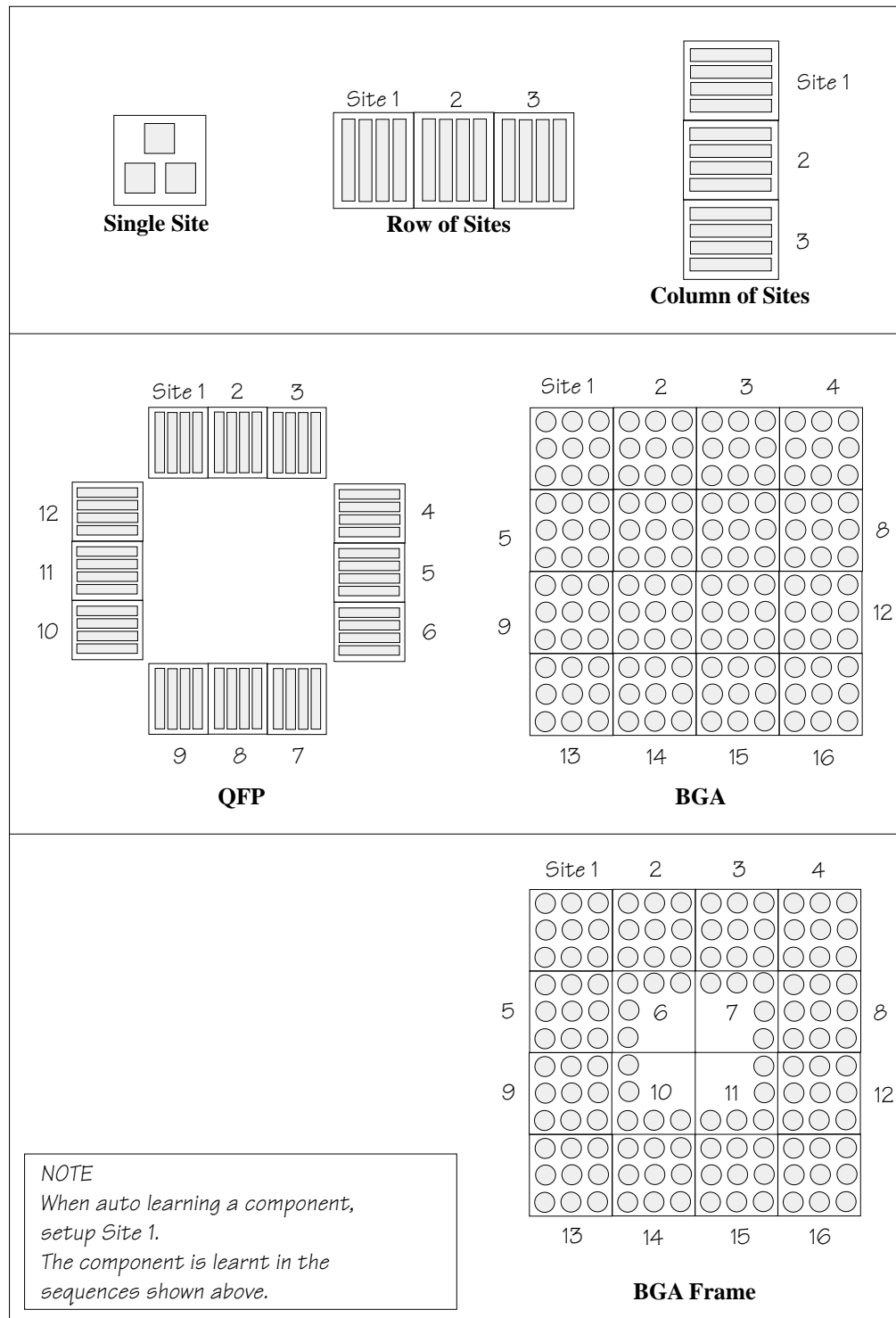


Figure 8-7 Auto Learn Site Types

Inspection Cycles

During setup, sites are given a priority of either Every Cycle (EC) or General (G). The amount of sites inspected during each cycle is set using the min sites/cycle parameter, this must be set to at least the amount of every cycle sites. As the name suggests, EC sites are inspected every cycle. General sites are inspected depending on the value of the min sites/cycle parameter and the number of EC sites as follows:

Number of general sites inspected per cycle = Min sites/cycle parameter - EC sites.

The general sites are inspected in rotation as shown below.

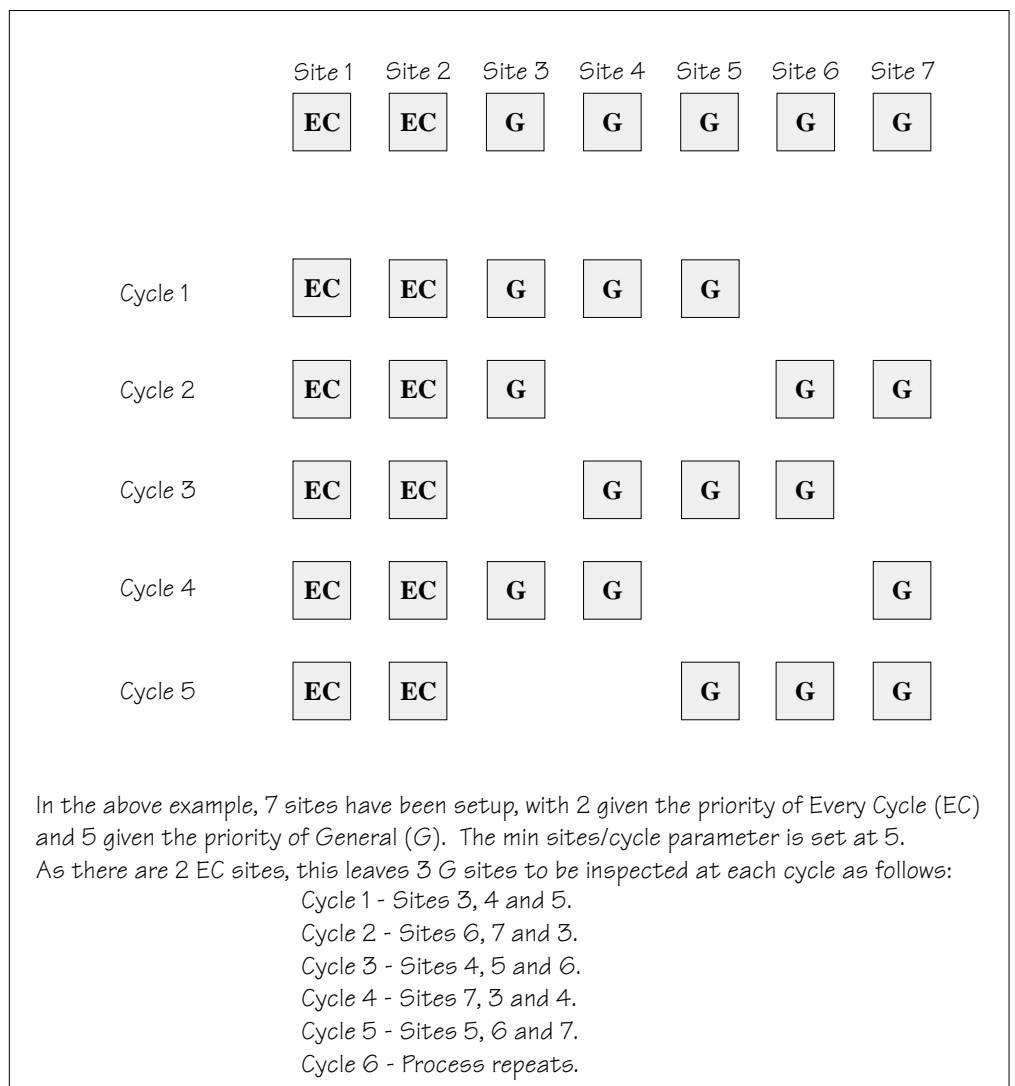


Figure 8-8 Site Inspection Cycles

Histogram

The Cognex card analyses the grey scale levels, of the pixels that make up the site image. From this information a histogram is produced, which can be used as a visual aid to setting up 2Di inspection.

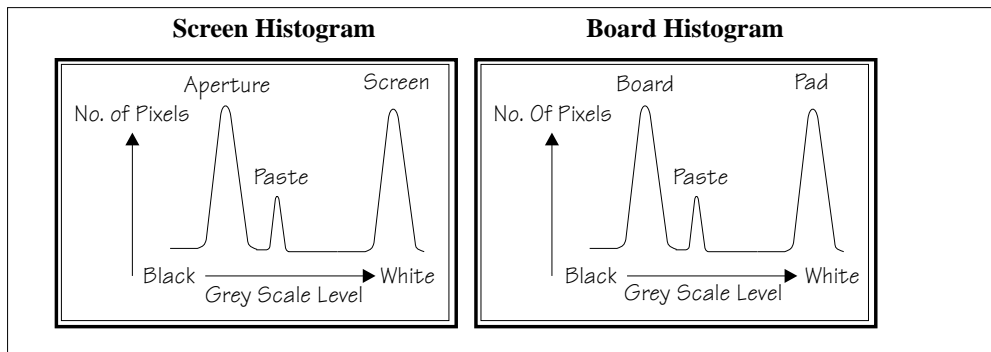


Figure 8-9 Screen and Board Histograms

Lighting

The lighting levels for 2Di inspection are software controlled. For a more detailed description of the camera and optical unit refer to the Camera and Vision Systems Module Chapter.

The GSX and Lt machines use either the silver or green cameras. The Horizon and Infinity machines use only the green camera.

For the silver camera the lighting parameters and their functions are shown below.

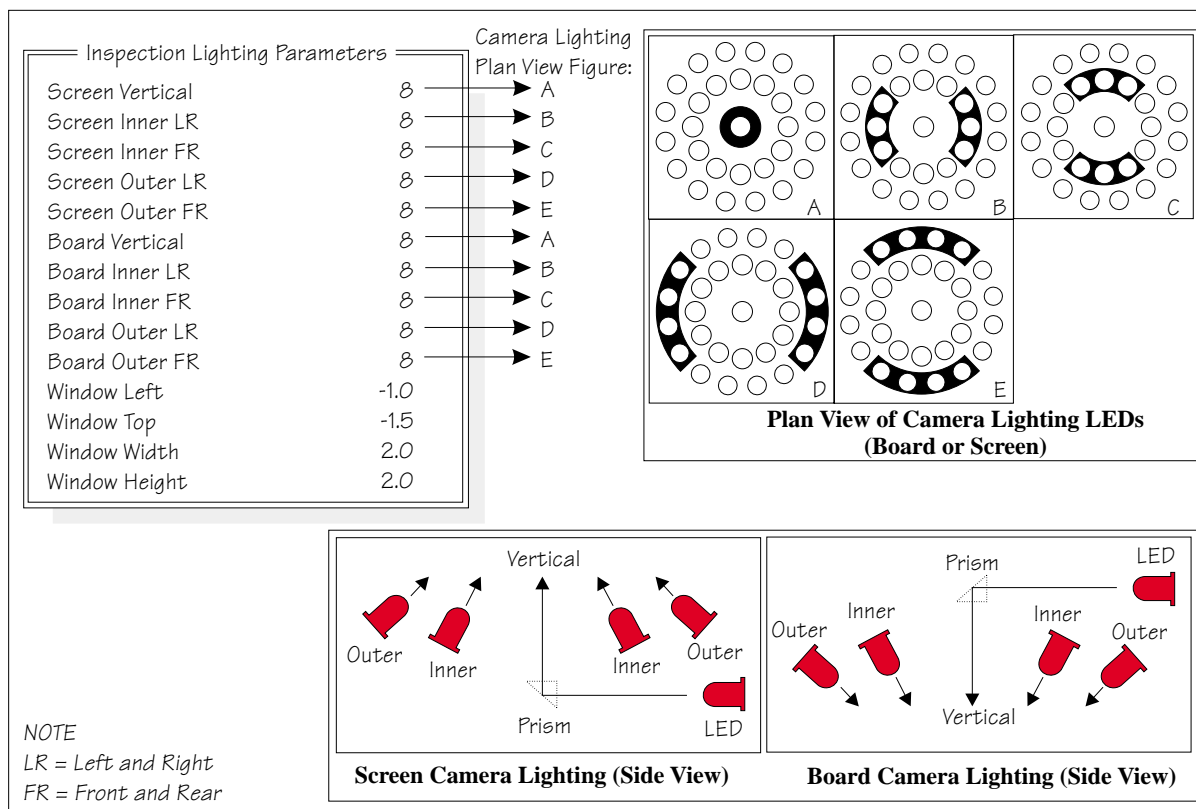


Figure 8-10 Software Controlled Lighting - Silver Camera

For the green camera the lighting parameters and their functions are shown below.

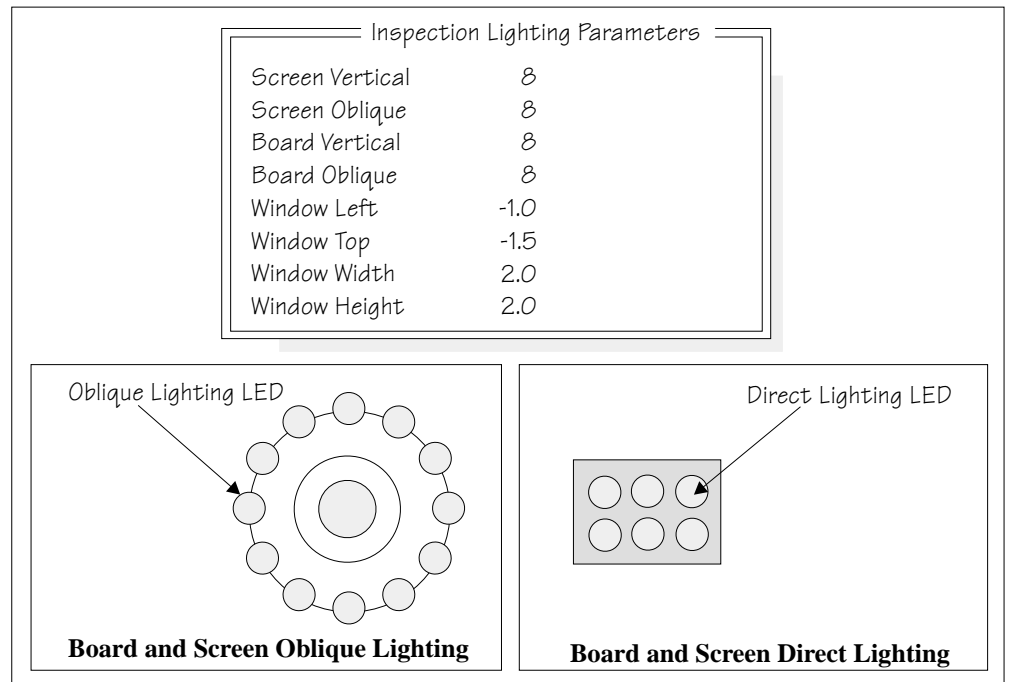


Figure 8-11 Software Controlled Lighting - Green Camera

Inspection Setup

Correct inspection setup is the key to effective inspection. By following the steps of the setup sequence, shown in the summary below and the setup guide over the page, effective inspection may be achieved.

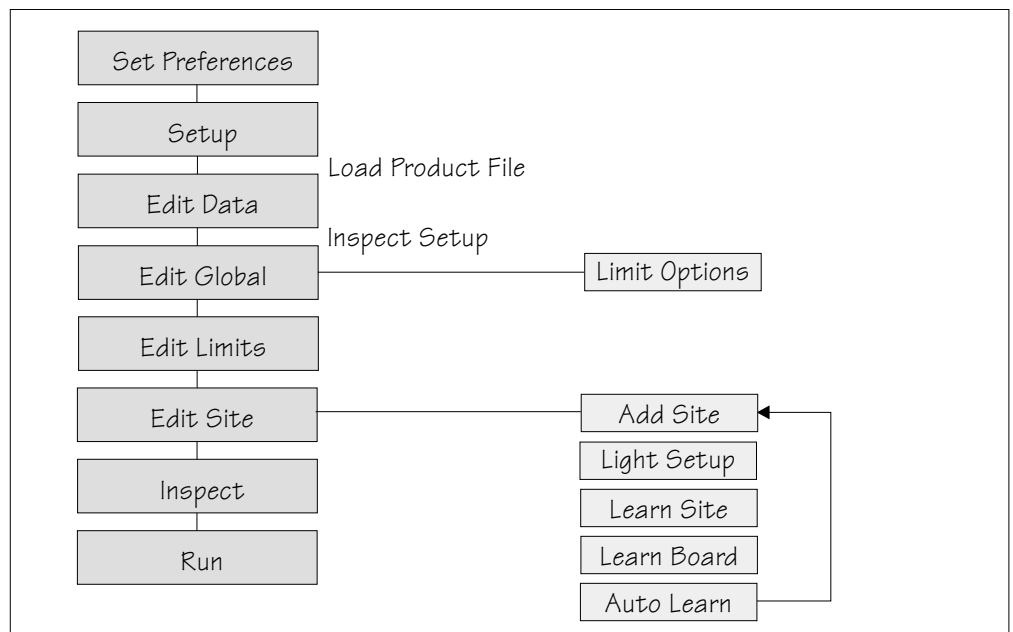


Figure 8-12 Summary of Setup

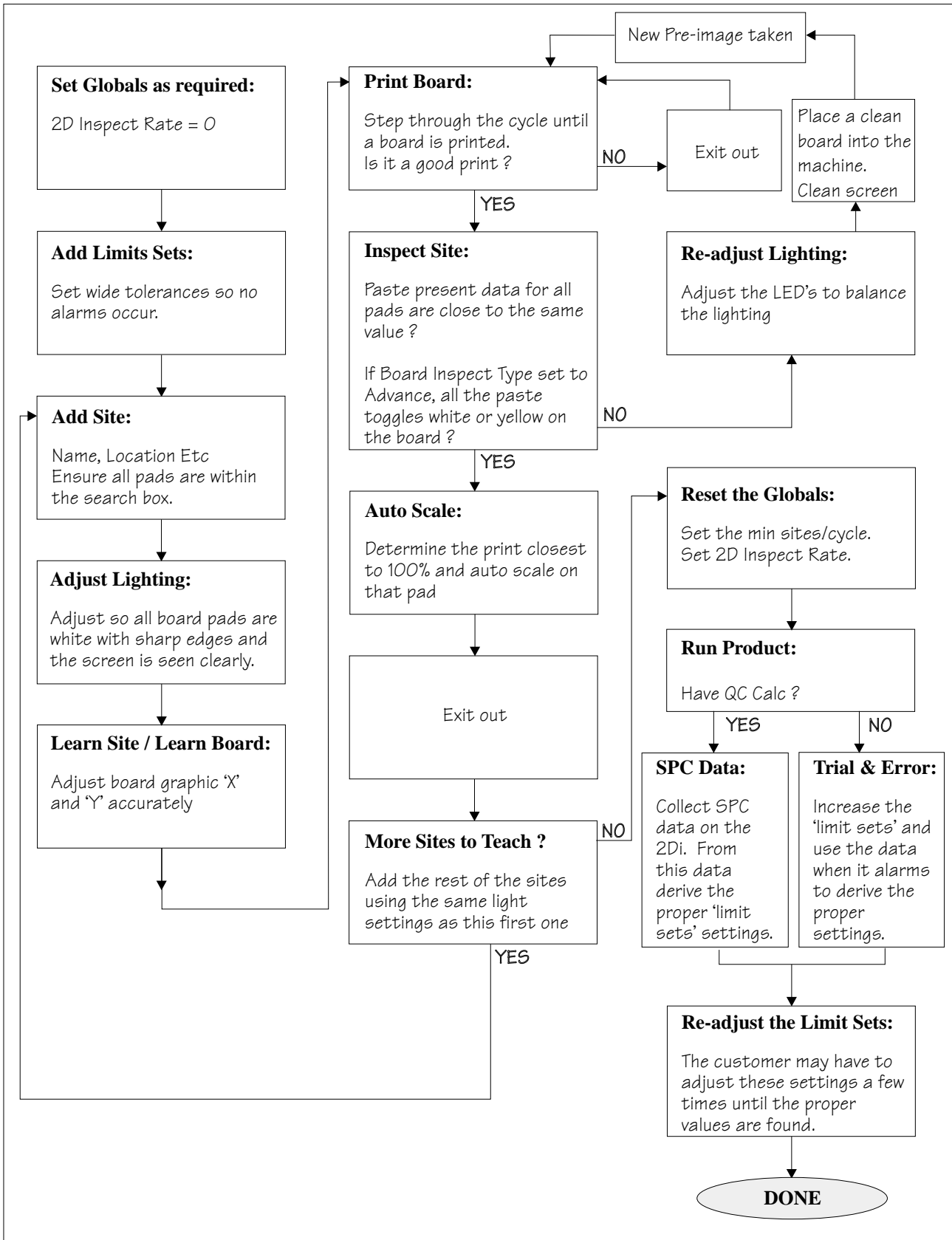


Figure 8-13 2Di Inspection Setup Guide

Adjustment During Print Cycle Most inspection parameters may be adjusted whilst a print cycle is in progress. The parameters that may be adjusted are:

- Global Limits
- Limit Sets
- Site Parameters

NOTE

The site coordinate parameters are not available whilst a print cycle is in progress.

To access the parameter adjustment menu during a print cycle select **Adjust Inspect**.

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste	Adjust Inspect	
---------	------------	------------	--------------	--------	-------------	-----------------------	--

The following window is displayed:

Global Inspect Parameters		Site Parameters	
2D Inspect Rate	1	Site Name	IC 27 - 1
Stencil Inspect Type	Advanced	Site Priority	General
Board Inspect Type	Advanced	Stencil Inspect Type	Advanced
Pre-image	Every	Board Inspect Type	Advanced
Min. Sites/Cycle	10	Site Alignment	X and Y
Warning Limit	3	Limit Set ID	Fine
Blockage Action	Auto	Paste Scaling	1.00
Blockage Clean	Mode 2	Site X Coord	39.4mm
Smear Action	Manual	Site Y Coord	71.2mm
Smear Clean	Mode 1	Site Width	3.00mm
Low Paste Action	Re-print	Site Height	4.00mm
Inspect After Clean	Enabled		
Post Print Alignment	Performed		
No. Sites	30		

Edit Global	Edit Limits	New Pre-images	Next Site	Previous Site		Edit Site	Exit
-------------	-------------	----------------	-----------	---------------	--	-----------	------

The New Pre-images button is only available if Pre-image is set to 1.

NOTE

If an error occurs when adjusting inspection parameters during a print cycle, the adjustment page closes.

Any changes made are saved.

2Di SETUP

Preparation

For 2Di inspection functionality the machine requires 2D Inspection to be set to enabled.

Set Preferences

1. Select **Maint.**

Run	Open Cover	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------------	------------	--------------	--------	-------	---------	---------------

2. Select **Set Prefs.**

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	------------------	----------	-------------	------

3. Set 2D inspection to enabled using the **Next** and **Incr.** keys.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	----------	--------------	-------	------

4. Ensure under screen cleaner function selected, ie **Vacuum** or **Standard**.
5. Select **Exit**. The message '**Printer configuration data file saved**' is displayed in the message prompt bar above the menu bar.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

6. Select **Exit**.

Calibrat Pressure	Calibrat Offset	Calibrat Vision	House Keeping	Set Prefs	Diagnost	Test Cycles	Exit
-------------------	-----------------	-----------------	---------------	-----------	----------	-------------	-------------

Load Product File

1. Select **Setup**.

Run	Open Cover	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------------	------------	--------------	--------	--------------	---------	--------

2. Select **Load Data**. The message '**Use keyboard to action product search**' is displayed in the message prompt bar above the menu bar.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	------------------	-----------	----------------	---------------	----------------	-----------------	------

- Use the **Left, Right, Up** and **Down** keys to highlight a product file. If the product to be setup is a new one, select an existing product file and modify it.

Load		Rebuild List	Left	Right	Up	Down	Exit
------	--	--------------	-------------	--------------	-----------	-------------	------

- Select **Load**. The machine loads the product file and trains the fiducials.

Load		Rebuild List	Left	Right	Up	Down	Exit
-------------	--	--------------	------	-------	----	------	------

Edit Data

- If the loaded product file is the correct one, go to Step 8. If the file needs to be modified continue with Step 2.
- Select **Edit Data**.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

The following window is displayed:

Edit Current Process Parameters		
PRODUCT NAME	Dek04	
PRODUCT ID	Dek04	
DWELL HEIGHT	30	mm
DWELL SPEED	24	mm/s
SCREEN ADAPTOR	NONE	
SCREEN IMAGE	EDGE	
CUSTOM SCREEN	DISABLED	
BOARD WIDTH	101.5	mm
BOARD LENGTH	152.5	mm
BOARD THICKNESS	1.6	mm
PRINT SPEED	150	mm/s
FLOOD SPEED	20	mm/s
PRINT FRONT LIMIT	0.0	mm
PRINT REAR LIMIT	0.0	mm
		..more

- To change the product name; highlight product name using the **Next** and **Previous** keys. Select **Incr.** type in required product name and press **Enter** using the keyboard.
- If the product name is changed the message **‘Do you also want to create a copy of the inspection file ?’** is displayed. Select one of the following:

Yes			Global Only				No
-----	--	--	-------------	--	--	--	----

Yes - All data is copied, including the site coordinates.

Global Only - The global parameters and limits are copied.

No - No inspection file is copied. Use when setting up an inspection file for the first time.

5. Using the **Next**, **Previous**, **Incr.** and **Decr.** keys, edit the current process parameters for the new product.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	--------------	--------------	------

6. Press **Save**.

	Save		Next	Previous	Incr.	Decr.	Exit
--	-------------	--	------	----------	-------	-------	------

7. When the message '**Board Data File Saved**' is displayed, press **Exit**.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	-------------

8. Select **Mode** until **Step** appears in mode option of the printer status display.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
-------------	-----------	-----------	----------------	---------------	----------------	-----------------	------

If the required screen is already in the printer go to Step 16.

If the screen needs to be changed continue with Step 9.

9. Select **Change Screen**.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	----------------------	----------------	-----------------	------

10. When the message '**Open Front Cover and Remove Screen**' is displayed lift the printhead cover.

11. Remove the screen from the printer.

12. Fit the new screen into the printer ensuring the correct orientation of the screen.

13. Lower the printhead cover.

14. Press the **System** button on the control console.

15. Select **Change Screen**.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	----------------------	----------------	-----------------	------

16. Select **Exit**.

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

17. Select **Run**.

Run	Open Cover	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------------	------------	--------------	--------	-------	---------	--------

18. If the screen has not been changed the message **‘Screen has not been changed for this product’** is displayed, select **Use Screen** to continue.

19. Select **Auto Board**.

Auto Board	Manual Board				Knead Paste		Exit
-------------------	--------------	--	--	--	-------------	--	------

20. The message **‘Load board’** is displayed. Load board, select **Confirm** when the board is loaded.

Confirm							Exit
----------------	--	--	--	--	--	--	------

21. Setup the board and screen fiducials.

22. Select **Inspect Setup**. If this option is unavailable, check set prefs for 2D Inspection enabled.

Step	Open Cover		Inspect Setup			Single	Exit
------	------------	--	----------------------	--	--	--------	------

Global Inspect Parameters		Site Parameters	
2D INSPECT RATE	1	SITE NAME	QFP 1
STENCIL INSPECT TYPE	ADVANCED	SITE PRIORITY	GENERAL
BOARD INSPECT TYPE	ADVANCED	STENCIL INSPECT TYPE	ADVANCED
PRE-IMAGE	EVERY	BOARD INSPECT TYPE	ADVANCED
MIN SITES/CYCLE	10	SITE ALIGNMENT	X AND Y
WARNING LIMIT	3	LIMIT SITE I.D.	FINE
BLOCKAGE ACTION	MANUAL ACTION	PASTE SCALING	1.00
BLOCKAGE CLEAN	MODE 1	SITE X COORD	84.5 mm
SMEAR ACTION	MANUAL ACTION	SITE Y COORD	89.5mm
SMEAR CLEAN	MODE 2	SITE WIDTH	4.00 mm
LOW PASTE ACTION	RE-PRINT	SITE HEIGHT	4.00 mm
INSPECT AFTER CLEAN	ENABLED		
POST PRINT ALIGNMENT	PERFORMED		
No. SITES	30		

NOTE

The windows in this procedure show the parameters and options available with both screen and board inspect type set to advanced. If screen or board inspect type is set to basic or none, certain parameters and options are not displayed.

CAUTION

FIDUCIAL POSITION. If during the print cycle, the position of board fiducials are changed, the position of previous inspection sites (if any) may be affected. Small changes are automatically compensated for, however large changes, ie more than 3mm, require sites to be repositioned.

Edit Global

1. Select **Edit Global**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
--------------------	-------------	-------------	-----------	---------------	-----------	--------------	------

NOTE

Delete site is only available if at least one site exists already.

Next site and previous site are only available if at least two sites exist already.

Edit Global Parameters	
Stencil Inspect Type	Advanced
Board Inspect Type	Advanced
Pre-image	Every
Min. Sites/Cycle	10
Warning Limit	3
Blockage Action	Manual
Blockage Clean	Mode 1
Smear Action	Manual
Smear Clean	Mode 2
Low Paste Action	Manual
Inspect After Clean	Enabled
Post Print Alignment	Performed

2. Enter the parameter values below using the **Next**, **Previous**, **Incr.** and **Decr.** keys.

Limit Options			Next	Previous	Incr.	Decr.	Exit
---------------	--	--	-------------	-----------------	--------------	--------------	------

- Pre-image to **Every**
- Min Sites to **10**
- Warning Limit to **20**, this can be reduced later in 'adjust inspect'.
- Blockage Action to **Manual**, this can be changed later in 'adjust inspect'.
- Smear Action to **Manual**, this can be changed later in 'adjust inspect'.

A definition of all 2Di parameters and their values is given at the end of this chapter.

On completion of successful setup, parameters can be adjusted to suit the product.

3. Select **Limit Options**.

Limit Options			Next	Previous	Incr.	Decr.	Exit
----------------------	--	--	------	----------	-------	-------	------

Global Limit Set Options	
Blockage	Enabled
Smear	Enabled
Paste	Enabled
Alignment	Enabled
Bridging	Enabled
Volume	Enabled

These are usually set to enabled. If for any reason a particular inspection is not required, set to disabled. If any global limit options are disabled the corresponding limit sets and parameters are greyed out. These are global limits, therefore they are active for the whole product. If a particular inspection is not required for a specific type of site, this can be achieved later in limit set options.

4. Enter global limit options using **Next**, **Previous**, **Incr.** and **Decr.** keys.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	--------------	--------------	------

5. Select **Exit**.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

6. Select **Exit**.

Limit Options			Next	Previous	Incr.	Decr.	Exit
---------------	--	--	------	----------	-------	-------	-------------

Edit Limits

1. Select **Edit Limits**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	--------------------	-------------	-----------	---------------	-----------	--------------	------

The following window is displayed:

Limit Sets	Limit Parameters
Default	Limit Set ID
	Blockage Warning
	Blockage Alarm
	Smear Warning
	Smear Alarm
	Paste Warning
	Paste Alarm
	Align Warning
	Align Alarm
	Bridge Warning
	Bridge Alarm
	Volume Warning
	Volume Alarm
	Default
	10%
	15%
	0.01 sq mm
	0.15 sq mm
	90%
	80%
	0.02 mm
	0.03 mm
	0.05 mm
	0.04 mm
	80%
	70%

Limit sets list the different sets of limit parameters that are available, initially only default is available. Limit parameters list the current limits for the highlighted limit set.

2. At this point either:
 - a) Add limits to create a new limit set, continue with **Add Limits** below.
 - or
 - b) Edit limits to edit an existing limit set, go to **Edit Limits** over the page.

NOTE

It is recommended that during setup, parameters are set at a level that no alarms occur (coarse). Once the inspection is correctly setup, the parameters can be tightened during production in 'adjust inspect'.

Add Limits

1. Select **Add Limits**.

Add Limits	Edit Limits		Next Limit	Previous Limit			Exit
-------------------	-------------	--	------------	----------------	--	--	------

NOTE

Next limit and previous limit are only available if at least one limit, plus the default, exist already.

2. Use the keyboard to enter the ID of the new limit set and press **Enter**.

NOTE

Limit ID may be any name up to 20 characters in length including spaces.

Edit Limit Parameters		
Limit Set ID	COARSE	
Blockage Warning	20	
Blockage Alarm	25	
Smear Warning	1.00	sq mm
Smear Alarm	1.50	sq mm
Paste Warning	70	
Paste Alarm	65	
Align Warning	0.200 mm	
Align Alarm	0.250 mm	
Bridge Warning	0.015 mm	
Bridge Alarm	0.010 mm	
Volume Warning	80	
Volume Alarm	70	

3. Enter parameters using the **Next, Previous, Incr.** and **Decr.** keys. A coarse set of values is shown above.

		Save Limits	Next	Previous	Incr.	Decr.	Exit
--	--	-------------	-------------	-----------------	--------------	--------------	------

4. Select **Save Limits**.

The message ‘Saving Fiducial Data - Please Wait Board data file saved’ is displayed.

		Save Limits	Next	Previous	Incr.	Decr.	Exit
--	--	--------------------	------	----------	-------	-------	------

5. Select **Exit**.

		Save Limits	Next	Previous	Incr.	Decr.	Exit
--	--	-------------	------	----------	-------	-------	-------------

6. Select **Edit Limits**.

Add Limits	Edit Limits		Next Limit	Previous Limit			Exit
------------	--------------------	--	------------	----------------	--	--	------

7. Go to Step 3 of Edit Limits (below).

Edit Limits

1. Select **Edit Limits**.

Add Limits	Edit Limits		Next Limit	Previous Limit			Exit
------------	--------------------	--	------------	----------------	--	--	------

The following window is displayed:

Edit Limit Parameters		
Limit Set ID	COARSE	
Blockage Warning	20	
Blockage Alarm	25	
Smear Warning	1.00	sq mm
Smear Alarm	1.50	sq mm
Paste Warning	70	
Paste Alarm	65	
Align Warning	0.200 mm	
Align Alarm	0.250 mm	
Bridge Warning	0.015 mm	
Bridge Alarm	0.010 mm	
Volume Warning	80	
Volume Alarm	70	

2. Enter parameters using the **Next**, **Previous**, **Incr.** and **Decr.** keys. A coarse set of values is shown above.

Limit Options		Save Limits	Next	Previous	Incr.	Decr.	Exit
---------------	--	-------------	-------------	-----------------	--------------	--------------	------

3. Select **Limit Options**.

Limit Options		Save Limits	Next	Previous	Incr.	Decr.	Exit
----------------------	--	-------------	------	----------	-------	-------	------

Site Limit Set Options	
Blockage	Enabled
Smear	Enabled
Paste	Enabled
Alignment	Enabled
Bridging	Enabled
Volume	Enabled

These are usually set to enabled. If for any reason a particular inspection is not required, set to disabled. If any global limit set options are disabled the corresponding parameters are greyed out. These are limit set options, therefore they are only active for this particular limit set. If a particular inspection is not required for the whole product, this can be achieved in global limit options, under edit globals, earlier in this chapter.

If either blockage or paste is set to disabled, volume is also disabled. Once volume is disabled by this method it is not automatically enabled should both blockage and paste be re-enabled. Volume must be selected and set to enabled.

4. Enter limit set options using **Next, Previous, Incr.** and **Decr.** keys.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	--------------	--------------	------

5. Select **Exit**.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

6. Select **Save Limits**.

The message **'Saving Fiducial Data - Please Wait Board data file saved'** is displayed.

Limit Options		Save Limits	Next	Previous	Incr.	Decr.	Exit
---------------	--	--------------------	------	----------	-------	-------	------

7. Select **Exit**.

Limit Options		Save Limits	Next	Previous	Incr.	Decr.	Exit
---------------	--	-------------	------	----------	-------	-------	-------------

8. Select **Exit**.

Add Limits	Edit Limits		Next Limit	Previous Limit			Exit
------------	-------------	--	------------	----------------	--	--	-------------

Edit Site

1. Select **Edit Site**. The edit site parameters window is displayed and the site name parameter is highlighted.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	------------------	--------------	------

NOTE

Delete site is only available if at least one site exists already. Next site and previous site are only available if at least two sites exist already.

Edit Site Parameters		
SITE NAME	SITE 1	
SITE PRIORITY	GENERAL	
STENCIL INSPECT TYPE	ADVANCED	
BOARD INSPECT TYPE	ADVANCED	
SITE ALIGNMENT	X and Y	
LIMIT SET ID	COARSE	
PASTE SCALING	1.00	
SITE X COORD	80.4	mm
SITE Y COORD	86.4	mm
SITE WIDTH	2.00	mm
SITE HEIGHT	2.00	mm
SCREEN GRAPHIC	WHITE	
SCREEN GRAPHIC X	0.00	mm
SCREEN GRAPHIC Y	0.00	mm
BOARD GRAPHIC	BLACK	
BOARD GRAPHIC X	0.00	mm
BOARD GRAPHIC Y	0.00	mm

NOTE

Screen graphic and board graphic are only relevant to GSX/Lt machines.

2. Select **Add Site**. The cursor flashes along side the site name parameter.

Add Site	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
-----------------	------------	-------------	------	----------	-------	-------	------

Edit Site Parameters		
SITE NAME	█	
SITE PRIORITY	GENERAL	
STENCIL INSPECT TYPE	ADVANCED	
BOARD INSPECT TYPE	ADVANCED	
SITE ALIGNMENT	X and Y	
LIMIT SET ID	COARSE	
PASTE SCALING	1.00	
SITE X COORD	80.4	mm
SITE Y COORD	86.4	mm
SITE WIDTH	2.00	mm
SITE HEIGHT	2.00	mm
SCREEN GRAPHIC	WHITE	
SCREEN GRAPHIC X	0.00	mm
SCREEN GRAPHIC Y	0.00	mm
BOARD GRAPHIC	BLACK	
BOARD GRAPHIC X	0.00	mm
BOARD GRAPHIC Y	0.00	mm

3. Use the keyboard to enter the site name and press **Enter**.

NOTE

Site name may be any name up to 20 characters in length including spaces.

4. Enter parameters using the **Next**, **Previous**, **Incr.** and **Decr.** keys.

	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
--	------------	-------------	-------------	-----------------	--------------	--------------	------

5. Highlight site limit ID using the **Next** and **Previous** keys.

	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
--	------------	-------------	-------------	-----------------	-------	-------	------

6. Select **Incr.**

	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
--	------------	-------------	------	----------	--------------	-------	------

Limit Sets	
DEFAULT	
FINE	
COARSE	

7. Using **Next Limit** or **Previous Limit** keys, highlight the coarse limit set created in either add limits or edit limits.

Use Limit			Next Limit	Previous Limit			Exit
-----------	--	--	-------------------	-----------------------	--	--	------

8. Select **Use Limit**.

Use Limit			Next Limit	Previous Limit			Exit
------------------	--	--	------------	----------------	--	--	------

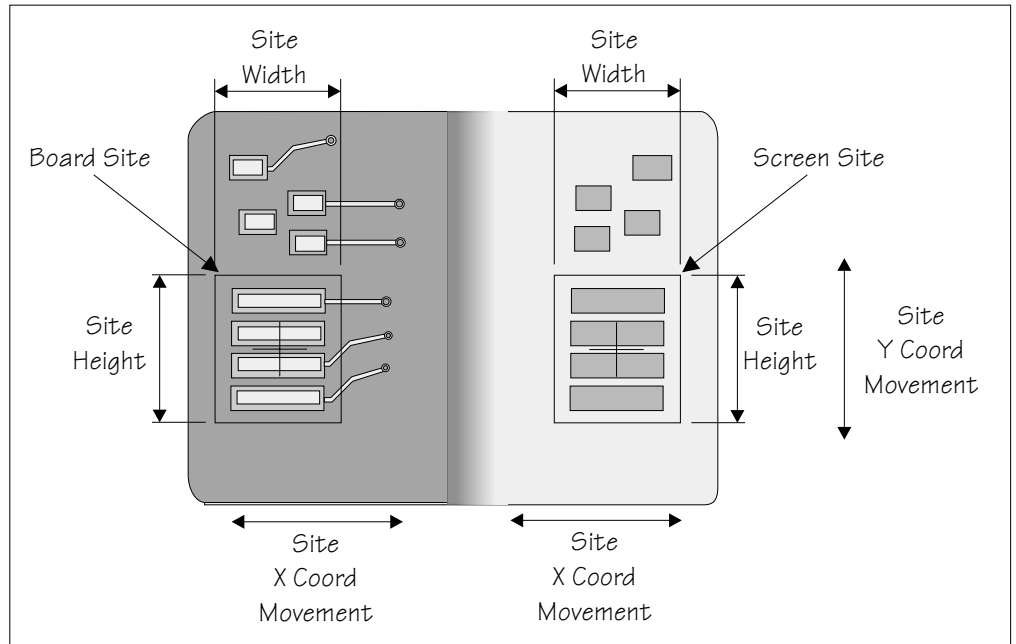
9. Measure the X and Y dimensions of the required site from the board or screen.

NOTE

For the initial setup of 2Di use a single site. After the setup is complete add auto learn features if required.

10. Set site X coord and site Y coord, using the **Next**, **Previous**, **Incr.** and **Decr.** keys, to display the site on the monitor. Adjust site width, site height, screen graphic (if applicable), site X coord, and site Y coord, using the **Next**, **Previous**, **Incr.** and **Decr.** keys, to position the site graphic over the screen, as shown.

	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
--	------------	-------------	-------------	-----------------	--------------	--------------	------



NOTE

Adjust the site height and site width so that the board site is large enough to cover the pads.

Lighting Setup

1. Select **Light Setup**.

	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
--	------------	--------------------	------	----------	-------	-------	------

Inspection Lighting Parameters		
Screen Vertical	8	
Screen Oblique	8	
Board Vertical	8	
Board Oblique	8	
Window Left	-1.5	mm
Window Top	-1.5	mm
Window Width	3.0	mm
Window Height	3.0	mm

Figure 8-14 Lighting Parameters - Green Camera

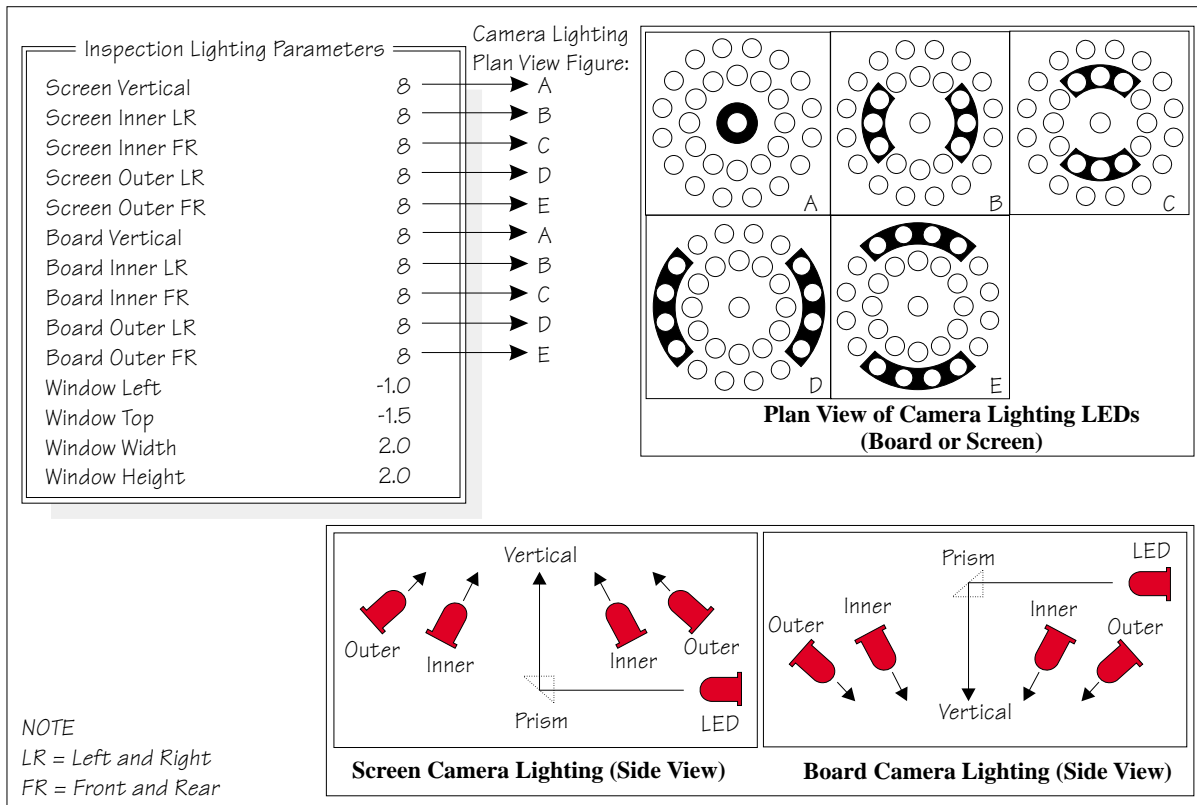
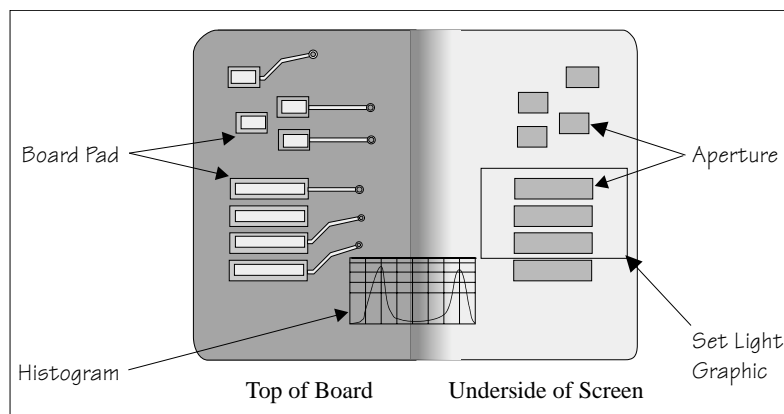


Figure 8-15 Lighting Parameters - Silver Camera

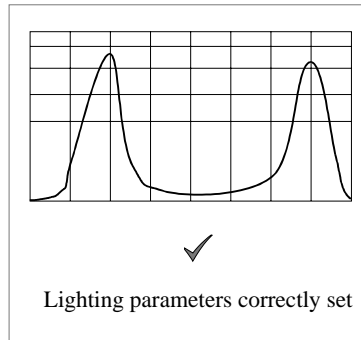
- Using the **Next**, **Previous**, **Incr.** and **Decr.** keys, adjust the lighting parameters to a level whereby the screen and board pads are just whitening out, without blooming, default level 8 is usually adequate for the majority of setups.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	-------------	-----------------	--------------	--------------	-------------

- For machines with a green camera go to Step 6. For machines with a silver camera continue with Step 4.
- Adjust the set light graphic using the window left, window top, window width and window height parameters to surround the feature providing 50% black and 50% white.



- Ensure the lighting histogram has a good definition of grey scale levels, as shown below.



- Select **Exit**.

			Next	Previous	Incr.	Decr.	Exit
--	--	--	------	----------	-------	-------	-------------

Learn Site

- Select **Learn Site**.

Add Site	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
----------	-------------------	-------------	------	----------	-------	-------	------

Dependent upon the 2D inspect type selected, the ‘**Screen Learnt**’ message is displayed in the message prompt bar above the menu bar. The apertures within the site are enclosed by individual graphic boxes, as shown over the page. If ‘**...Screen Not Learnt**’ is displayed, adjust the site parameters and re-learn the site.

- Using the **Next**, **Previous**, **Incr.** and **Decr.** keys adjust the board graphic X and board graphic Y coordinates to achieve graphic alignment on the board.

Learn Board	ReLearn Screen	Auto Learn	Next	Previous	Incr.	Decr.	Exit
-------------	----------------	------------	-------------	-----------------	--------------	--------------	------

- Select **Learn Board**.

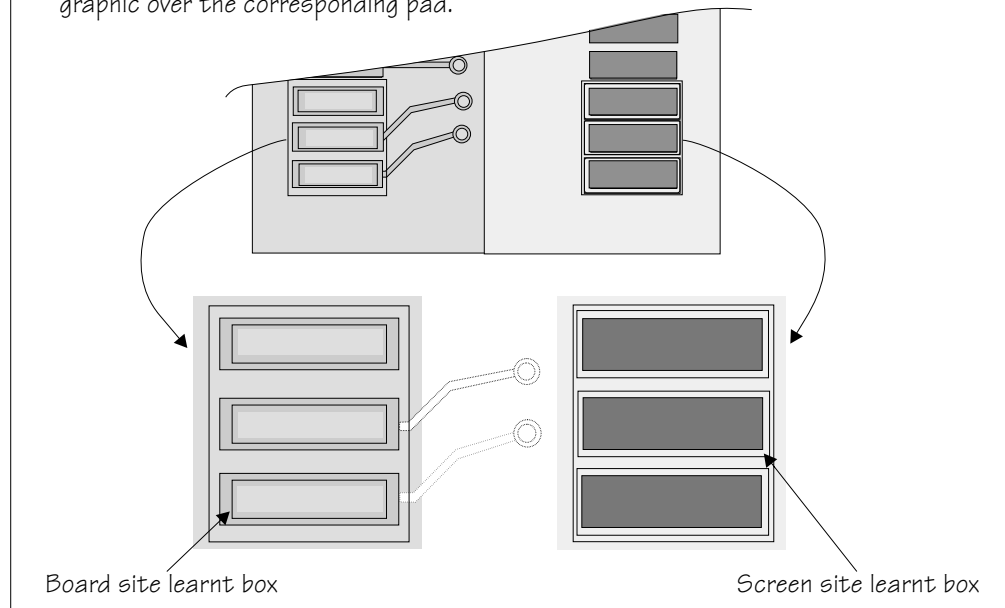
Learn Board	ReLearn Screen	Auto Learn	Next	Previous	Incr.	Decr.	Exit
--------------------	----------------	------------	------	----------	-------	-------	------

- The message ‘**Board Learnt**’ is displayed in the message prompt bar above the menu bar. If ‘**...Board Not Learnt**’ is displayed, edit the site parameters and re-learn the site.

NOTE

- If the size of the graphic box for the site is altered, the screen has to be re-learnt and this step repeated.
- Exiting without learning, loses the edited information.
- The number of pads must equal the number of apertures for a successful site.
- Adjust the board graphic X and board graphic Y accurately, as this is used as a reference for alignment measurements.

The site learnt graphics appear around the screen aperture and on the board pads confirming that the site is learnt. If necessary, adjust the mirror image board site graphic over the corresponding pad.



5. Select **Exit**.

Learn Board	ReLearn Screen	Auto Learn	Next	Previous	Incr.	Decr.	Exit
-------------	----------------	------------	------	----------	-------	-------	-------------

6. Select **Exit**.

Add Site	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
----------	------------	-------------	------	----------	-------	-------	-------------

Inspect

1. Select **Inspect Site**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	-----------	---------------------	------

NOTE

Delete site, next site and previous site may not be displayed if other sites do not exist.

The following window is displayed:

Inspection Results					
SITE NAME		SITE 1			
Maximum Blockage	0%				PASS
Smear Area	0.0 sq mm				PASS
Minimum Paste	0%				ALARM
X Alignment	----				INVALID
Y Alignment	----				INVALID
Bridging	+10.00mm				PASS
Minimum Paste Volume	0%				ALARM
Bridge Warnings	0				
Bridge Alarms	0				
<hr/>					
No.	Blockage	Paste Present	Volume	AlignX	AlignY
1	0%	0%	0%	----	----
2	0%	0%	0%	----	----

2. If the screen and board were clean, the maximum blockage, smear area and minimum paste should all be zero. If readings are incorrect, repeat from Lighting Setup and re-inspect.

3. Select **Exit**.

Auto Scale	Toggle Paste		Next	Previous		Save Image	Exit
------------	--------------	--	------	----------	--	------------	-------------

4. Select **Exit**.

Edit Global	Edit Limit	Delete Site			Edit Site	Inspect Site	Exit
-------------	------------	-------------	--	--	-----------	--------------	-------------

5. Select **Step** until the board is printed.

Step			Inspect Setup			Single	Exit
-------------	--	--	---------------	--	--	--------	------

6. Select **Step** until inspect setup is displayed.

Step						Single	Exit
-------------	--	--	--	--	--	--------	------

7. Select **Inspect Setup**.

Step			Inspect Setup			Single	Exit
------	--	--	----------------------	--	--	--------	------

8. Select **Inspect Site**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	-----------	---------------------	------

The following window is displayed:

Inspection Results					
SITE NAME		SITE 1			
Maximum Blockage	0%	PASS			
Smear Area	0.00 sq mm	PASS			
Minimum Paste	94%	PASS			
X Alignment	+0.007mm	PASS			
Y Alignment	-0.003mm	PASS			
Bridging	5.012mm	PASS			
Minimum Paste Volume	93%	PASS			
Bridge Warnings	0				
Bridge Alarms	0				
No.	Blockage	Paste Present	Volume	AlignX	AlignY
1	0%	94%	93%	+0.007	-0.003
2	0%	98%	97%	+0.006	-0.002

NOTE

A reliable paste present reading is made only when the lighting is set correctly.

9. If the board inspection type is set to advanced carry out Steps 9a and 9b. If the board inspection type is set to none or basic carry out Step 9c.

9a. Select **Toggle Paste**.

Auto Scale	Toggle Paste		Next	Previous		Save Image	Exit
------------	---------------------	--	------	----------	--	------------	------

NOTE

Selecting toggle paste either shows or hides the paste display overlay onto the monitor. The toggle paste facility on the board image is only functional with the board inspection type set to advanced. Toggling paste on the screen is only available on Horizon and Infinity machines and only with the screen inspect type set to basic or advanced.

9b. Ensure that the paste display overlay coincides with the presence of paste. If this is correct go to Step 20. If this is incorrect, note the position of the non-existent paste and continue with Step 10.

NOTE

If the paste display overlay coincides with the presence of paste, any poor inspection results are due to process problems and not 2Di setup.

9c. Ensure that the inspection results are consistent with the amount of paste on the pad. If this is correct go to Step 20. If this is incorrect continue with Step 10.

10. Select **Exit**.

Auto Scale	Toggle Paste		Next	Previous		Save Image	Exit
------------	--------------	--	------	----------	--	------------	-------------

11. Select **Edit Site**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	------------------	--------------	------

12. Select **Light Setup**.

Add Site	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
----------	------------	--------------------	------	----------	-------	-------	------

13. Adjust the lighting parameters to improve the lighting conditions in the suspect areas.

14. Select **Exit**.

	Record Image		Next	Previous	Incr.	Decr.	Exit
--	--------------	--	------	----------	-------	-------	-------------

15. Select **Exit**.

Add Site	Learn Site	Light Setup	Next	Previous	Incr.	Decr.	Exit
----------	------------	-------------	------	----------	-------	-------	-------------

16. Select **Exit**.

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	-----------	--------------	-------------

17. Select **Step** to remove the board from the machine.

Step			Inspect Setup			Single	Exit
-------------	--	--	---------------	--	--	--------	------

18. Load a clean board onto the rails and clean the screen.
19. Repeat Steps 5-9.
20. Select **Auto Scale**.

Auto Scale	Toggle Paste		Next	Previous		Save Image	Exit
-------------------	--------------	--	------	----------	--	------------	------

Selecting auto scale automatically adjusts the paste scaling value for the current site, to cause the value of paste present, on the pad currently selected in the inspection result list, to be reported as 100%. The inspection results window is updated accordingly. If the calculated value for paste scaling falls outside the range of allowable values, an error window is displayed and the paste scaling value is set to the limit nearest the calculated value. However, if the currently selected paste present value is zero, no adjustment of the paste scaling value takes place and an error window is displayed. A prompt is displayed giving the new scaling factor value each time it is changed. The auto scale button is only present if board inspection is being performed.

21. Select **Exit**.

Auto Scale	Toggle Paste		Next	Previous		Save Image	Exit
------------	--------------	--	------	----------	--	------------	-------------

22. Select **Step** to remove the board from the machine.

Step			Inspect Setup			Single	Exit
-------------	--	--	---------------	--	--	--------	------

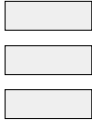
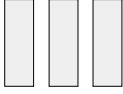
23. Clean the board and screen.
24. Run through the print cycle in step mode until inspect setup is displayed.
25. Select **Inspect Setup**.

Step			Inspect Setup			Single	Exit
------	--	--	----------------------	--	--	--------	------

26. Carry out Section Edit Site and create all required sites, using the same lighting parameters as before (see Auto Learn).

NOTE

For the silver camera only, if the new sites pads and/or apertures are at 90 degrees to the original pads and/or apertures, interchange the lighting parameters inner LR with inner FR and outer LR with outer FR, on the board and/or screen, as shown below.

Original Site	New Site																																												
																																													
<table border="1"> <thead> <tr> <th colspan="2">Inspection Lighting Parameters</th> </tr> </thead> <tbody> <tr><td>Screen Vertical</td><td>8</td></tr> <tr><td>Screen Inner LR</td><td>9</td></tr> <tr><td>Screen Inner FR</td><td>10</td></tr> <tr><td>Screen Outer LR</td><td>11</td></tr> <tr><td>Screen Outer FR</td><td>12</td></tr> <tr><td>Board Vertical</td><td>8</td></tr> <tr><td>Board Inner LR</td><td>9</td></tr> <tr><td>Board Inner FR</td><td>10</td></tr> <tr><td>Board Outer LR</td><td>11</td></tr> <tr><td>Board Outer FR</td><td>12</td></tr> </tbody> </table>	Inspection Lighting Parameters		Screen Vertical	8	Screen Inner LR	9	Screen Inner FR	10	Screen Outer LR	11	Screen Outer FR	12	Board Vertical	8	Board Inner LR	9	Board Inner FR	10	Board Outer LR	11	Board Outer FR	12	<table border="1"> <thead> <tr> <th colspan="2">Inspection Lighting Parameters</th> </tr> </thead> <tbody> <tr><td>Screen Vertical</td><td>8</td></tr> <tr><td>Screen Inner LR</td><td>10</td></tr> <tr><td>Screen Inner FR</td><td>9</td></tr> <tr><td>Screen Outer LR</td><td>12</td></tr> <tr><td>Screen Outer FR</td><td>11</td></tr> <tr><td>Board Vertical</td><td>8</td></tr> <tr><td>Board Inner LR</td><td>10</td></tr> <tr><td>Board Inner FR</td><td>9</td></tr> <tr><td>Board Outer LR</td><td>12</td></tr> <tr><td>Board Outer FR</td><td>11</td></tr> </tbody> </table>	Inspection Lighting Parameters		Screen Vertical	8	Screen Inner LR	10	Screen Inner FR	9	Screen Outer LR	12	Screen Outer FR	11	Board Vertical	8	Board Inner LR	10	Board Inner FR	9	Board Outer LR	12	Board Outer FR	11
Inspection Lighting Parameters																																													
Screen Vertical	8																																												
Screen Inner LR	9																																												
Screen Inner FR	10																																												
Screen Outer LR	11																																												
Screen Outer FR	12																																												
Board Vertical	8																																												
Board Inner LR	9																																												
Board Inner FR	10																																												
Board Outer LR	11																																												
Board Outer FR	12																																												
Inspection Lighting Parameters																																													
Screen Vertical	8																																												
Screen Inner LR	10																																												
Screen Inner FR	9																																												
Screen Outer LR	12																																												
Screen Outer FR	11																																												
Board Vertical	8																																												
Board Inner LR	10																																												
Board Inner FR	9																																												
Board Outer LR	12																																												
Board Outer FR	11																																												

27. On completion carry out Section Inspect.

28. Set the required 2D inspect rate and the Min site/cycle parameters in edit global.

29. This completes the 2Di setup. Commence print run in auto mode.

NOTE

During production use **adjust inspect** to fine tune the inspection process.

Auto Learn

Prior to carrying out auto learn, the 2Di setup described in the preceding pages, must have been carried out.

1. From the Section Auto Learn, under Module Overview, at the front of this chapter, identify the position of Site 1 for the required feature.
2. Carry out Section Edit Site for Site 1 coordinates.
3. Carry out Sub Section Lighting Setup, using the same parameters as previous.
4. Carry out Sub Section Learn Site paras 1-4.
5. Select **Auto Learn**.

Learn Board	ReLearn Screen	Auto Learn	Next	Previous	Incr.	Decr.	Exit
-------------	----------------	-------------------	------	----------	-------	-------	------

The message **'Select Component type to Auto Learn:'** is displayed. The following messages appear beneath this message in rotation:

- 'Row - Start at left most end of horizontal'**
- 'Col - Start at topmost end of vertical'**
- 'QFP - (Quad Flat Pack) - Start at left most end of top horizontal line'**
- 'BGA - (Ball Grid Array) - Start at top left corner of array'**
- 'BGA Frame - Start at top left corner of array frame'**

6. Select required component to learn.

Learn Row	Learn Column		Learn QFP	Learn BGA	Learn BGA Frame		Abort
-----------	--------------	--	-----------	-----------	-----------------	--	-------

The message bar reports the progress of the auto learn as a set of sites of the appropriate type are created and learnt. The original site, and each site that is created, is given the same name as the original site, but with a '~' symbol followed by a three digit number in sequence. While creation and learning is in progress the following menu bar is displayed:

						Abort Auto Learn	
--	--	--	--	--	--	------------------	--

As each new site is created and learnt, the newly created name and data is displayed in the Edit Site Parameters window.

If Abort Auto Learn is selected the message **'Site creation and learning interrupted; do you want to . . .'** is displayed. The following menu bar is displayed:

Abandon							Continue
---------	--	--	--	--	--	--	----------

If Abandon is selected any sites that have been created are deleted. If Continue is selected the auto learn resumes, creating and learning sites.

7. On completion of a successful auto learn of the selected component, the following menu bar is displayed:

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	-----------	--------------	------

8. Repeat Steps 1 to 7 for further auto learn features.

9. While creating and learning the sites for a device, if a site is not positioned correctly for learning, the following menu bar is displayed:

Adjust Site	Learn Board	Learn Screen				Continue	Exit
-------------	-------------	--------------	--	--	--	----------	------

10. Select **Adjust Site**. The learn site parameters window is displayed.

Adjust Site	Learn Board	Learn Screen				Continue	Exit
--------------------	-------------	--------------	--	--	--	----------	------

Learn Site Parameters		
SITE X COORD	52.0	mm
SITE Y COORD	36.5	mm
SITE WIDTH	2.00	mm
SITE HEIGHT	2.00	mm
SCREEN GRAPHIC X	-0.01	mm
SCREEN GRAPHIC Y	-0.01	mm
BOARD GRAPHIC X	0.00	mm
BOARD GRAPHIC Y	0.00	mm

11. Adjust site parameters as required using **Next**, **Previous**, **Incr.** and **Decr.** keys.

Continue	Learn Board	Learn Screen	Next	Previous	Incr.	Decr.	Exit
----------	-------------	--------------	-------------	-----------------	--------------	--------------	------

12. Select **Learn Screen**.

Continue	Learn Board	Learn Screen	Next	Previous	Incr.	Decr.	Exit
----------	-------------	---------------------	------	----------	-------	-------	------

13. The message '**Screen Learnt**' is displayed. If the message '**...Screen Not Learnt**' is displayed, edit the site parameters and select **Learn Screen**.

14. Select **Learn Board**.

Continue	Learn Board	Learn Screen	Next	Previous	Incr.	Decr.	Exit
----------	--------------------	--------------	------	----------	-------	-------	------

15. The message '**Board Learnt**' is displayed. If the message '**...Board Not Learnt**' is displayed, edit the site parameters and select **Learn Board**.

16. Select **Continue**.

Continue	Learn Board	Learn Screen	Next	Previous	Incr.	Decr.	Exit
-----------------	-------------	--------------	------	----------	-------	-------	------

17. Select **Continue**. The auto learn process continues.

Adjust Site	Learn Board	Learn Screen				Continue	Exit
-------------	-------------	--------------	--	--	--	-----------------	------

The message bar reports the progress of the auto learn as the system searches for a site, learns a site and moves to the next site.

18. On completion of a successful auto learn of the selected component, the following menu bar is displayed:

Edit Global	Edit Limits	Delete Site	Next Site	Previous Site	Edit Site	Inspect Site	Exit
-------------	-------------	-------------	-----------	---------------	-----------	--------------	------

19. Carry out Section Inspect for all sites.

SETUP TIPS

Problem	Solution
No inspection Setup available	Ensure that 2Di inspection is enabled in Set Prefs.
System not inspecting or inspection cycle not being carried out	The 2D inspect rate may equal 0.
Order of Inspection	If a particular sequence of site inspection is required, the sites should be selected as every cycle sites and setup in the sequence required. Every cycle sites are inspected in the order that they were setup. General sites are inspected in an order that depends on their position and their inspection sequence cannot be set. If at a later date a site is edited the sequence is affected.
Screen and Board - Cleaning Before Setup	Before 2Di inspection setup, ensure the screen and board being used have been thoroughly cleaned and are free of all paste deposits. If either are not cleaned thoroughly any remaining smearing, partially blocked apertures or paste on the board may cause an incorrect setup.
Site Area Accuracy	Ensure that when setting site parameters (height, width etc.), the site graphic is placed around the site to give clearance from the apertures and pads and to prevent other areas being inspected.
Lighting Conditions	If the inspection result is not as expected, it is possible that the site was learnt under different lighting conditions. This problem may be resolved by re-learning the site under new lighting conditions, or by the use of paste scaling for paste present adjustment.
Site Quality	The sites selected for inspection should be of good quality. Sites should not have rounded or chamfered edges or uneven or excessive tinning, this can lead to misleading results when attempting to learn sites.
Sites Being Lost	Ensure that both board and screen have been learnt. After adjusting board or screen site parameters always learn both, further editing can be done at a later stage. The number of pads must equal the number of apertures for a successful site.
Inspection alarms too frequent and unnecessary	This may be a symptom of limits being set too tight. Relax the limits so that results of an acceptable print produce pass or warning, not alarm, or use the global limit option or limit options to disable the particular limit checking.

OPTIONS AFTER AN INSPECTION ALARM

The machine stops at the first inspection alarm. When an inspection alarm occurs, several menu bar options become available.

Accept	Inspect More		Recovery Action	Adjust	Inspect All	Adjust Inspect	Reject
--------	--------------	--	-----------------	--------	-------------	----------------	--------

The options carry out the following functions:

Accept Selecting this option clears the alarm panel, changes the beacon back to green and feeds the board through the machine.

Inspect More Selecting this option clears the alarm panel, changes the beacon back to green and allows the inspection sequence to continue, until it either completes inspection or raises another alarm.

Recovery Action Selecting this option displays the following menu:

Paste Load	Clean Mode 1	Clean Mode 2	Re-print Board				Exit
------------	--------------	--------------	----------------	--	--	--	------

The user prompt text shows the following lines:

‘Clean Mode 1 : XXXX’
‘Clean Mode 2 : YYYY’

Where XXXX and YYYY are the descriptions of the clean mode settings, ie **‘WVWD’** for wet, vac, wet, dry.

Paste Load Selecting this option initiates a paste load cycle, if a paste dispenser is fitted or enables paste to be loaded manually.

Clean Mode 1 and 2 Selecting either clean mode 1 or clean mode 2 initiates the screen clean cycle set up for that mode.

Re-print Board Selecting this option clears the alarm panel and changes the beacon back to green. The board is re-printed and the inspection sequence is started again from the beginning. All the existing alarm information is cleared.

NOTE
The Re-print Board button is not available if the current board has already been re-printed.

Adjust Selecting this option allows the adjustment of process parameters.

Inspect All Selecting this option clears the alarm panel and changes the beacon back to green. The inspection sequence is restarted from the beginning. All the existing alarm information is cleared.

Adjust Inspect Selecting this option displays the following menu:

Edit Global	Edit Limits	New Pre-images			Edit Site	Inspect Site	Exit
-------------	-------------	----------------	--	--	-----------	--------------	------

Edit Global Selecting this option opens the edit global parameters window, allowing parameters that are used throughout the inspection to be altered.

Edit Limits Selecting this option opens the limit sets window, allowing a set of limit parameters to be selected and altered.

New Pre-images Selecting this option initiates a pre-print inspection on the next print cycle to capture the new pre-images. The message ‘**New pre-images will be collected next print cycle**’ is displayed.

NOTE
The New Pre-image button is only available if pre-image is set to 1.

Edit Site Selecting this option opens the site parameters window, allowing adjustment of the site specific parameters.

Inspect Site Selecting this option opens the inspection results window and displays the following menu:

Auto Scale	Toggle Paste		Next	Previous			Exit
------------	--------------	--	------	----------	--	--	------

Selecting **Next** or **Previous** moves the highlight up and down the list of site pads.

Selecting **Toggle Paste** either shows or hides the paste display overlay onto the monitor. The toggle paste facility on the board image is only functional with the board inspection type set to advanced. Toggling paste on the screen is only available on Horizon and Infinity machines and only with the screen inspect type set to basic or advanced.

Selecting **Auto Scale** automatically adjusts the paste scaling value for the current site, to cause the value of paste present, on the pad currently selected in the inspection result list, to be reported as 100%. This is used where the site pad causing the alarm is actually a good print.

Reject Selecting this option clears the alarm panel and the board is fed to the output end of the rail system and held there.

IMAGE RECORDING

Selecting **Save Image** saves the inspection object data using the save object command. This option is only available if image recording in set preferences is set to VP or PC disk. If the image recording is set to VP disk, the file name is inspnnn.img, where nnn is the next sequence number to save. If the image recording is set to PC disk, the file name is inspn.img, where n is a number cycling from 1 to 5. The first image saved after initialization is insp1.img. Files are overwritten without warning.

NOTE

VP disk saves to the Cognex HD if fitted. It is recommended to use PC disk only for image recording.

MENU PARAMETERS

Parameter	Definition
2D Inspect Rate	This parameter sets the number of print cycles between inspection cycles, with zero indicating no inspection. Minimum - 0 Maximum - 100 Increments - 1 Default - 0
Stencil Inspect Type	This parameter sets the extent of the screen inspection. The options are: None Basic Advanced Default - Basic
Board Inspect Type	This parameter sets the extent of the board inspection. The options are: None Basic Advanced Default - Basic
Pre-image	This parameter sets when a pre-image is taken. The options are: One - The first board only Every - Every board Default - One
Min Sites/Cycle	This parameter sets the number of sites to inspect every cycle. Minimum - Number of Every Cycle sites Maximum - Total number of sites Increments - 1 Default - Number of every cycle sites
Warning Limit	This parameter determines how many consecutive warnings on the same site constitute an alarm. Minimum - 1 Maximum - 20 Increments - 1 Default - 3
Blockage Action	This parameter sets the action performed on a blockage alarm. The options are: Manual Automatic Default - Manual
Blockage Clean	This parameter sets the type of screen clean performed on blockage alarm. The options are: Mode 1 Mode 2 Default - Mode 1
Smear Action	This parameter sets the action performed on a smear alarm. The options are: Manual Action Automatic Default - Manual
Smear Clean	This parameter sets the type of screen clean performed on a smear alarm. The options are: Mode 1 Mode 2 Default - Mode 2

Parameter	Definition
Low Paste Action	This parameter sets the action performed on a low paste alarm. The options are: Manual Re-print Default - Manual
Inspect After Clean	This parameter sets whether a screen is inspected before the next board is printed following a screen clean. The options are: Disabled Enabled Default - Disabled
Post Print Alignment	This parameter sets whether post print alignment is carried out. The options are: Not Performed Performed Default - Not Performed
No. Sites	This parameter displays the total number of sites. Minimum - 0 Maximum - 500 Increments - 1 Default - 0
Site Name	The unique uppercase name given to a site for identification and which cannot be mistaken for the name of a created site. The name can have a maximum of 20 characters.
Site Priority	This parameter determines the priority of a site. Where the site is part of a device, the value applies to the whole device. The options are: Not Inspected General Every Cycle Default - Every Cycle
Site Alignment	This parameter sets what alignment data is reported for each site. The options are: X & Y X Only Y Only None Default - None
Limit Set ID	The unique uppercase name given to a set of limits which can be applied to any site. This enables different sites to be inspected according to different limits. The name can have a maximum of 20 characters. A maximum of 14 limit sets can be created.
Paste Scaling	This parameter enables adjustment of the paste scaling value for the current site, to cause the value of paste present on the pad, currently selected in the inspection list, to be reported as 100%. This parameter is used in conjunction with the Auto Scale function. Minimum - 0.01 Maximum - 2.00 Increments - 0.01 Default - 1
Site X Coord	The coordinate of a site taken from the front left corner of the board, in the X direction. Minimum - 0.0mm Maximum - Board Length Increments - 0.1mm Default - 164.1mm

Parameter	Definition
Site Y Coord	The coordinate of a site taken from the front left corner of the board, in the Y direction. Minimum - 0.0mm Maximum - Board Width Increments - 0.1mm Default - 59.5mm
Site Width	The width of the site to be inspected. Minimum - 0.5mm Maximum - 4.0mm Increments - 0.01mm Default - 0.7mm
Site Height	The height of the site to be inspected. Minimum - 0.5mm Maximum - 4.0mm Increments - 0.01mm Default - 4mm
Blockage Warning	This parameter sets the amount of aperture blockage required to initiate a warning. Minimum - 0% Maximum - 100% Increments - 1% Default - 10%
Blockage Alarm	This parameter sets the amount of aperture blockage required to initiate an alarm. Minimum - 0% Maximum - 100% Increments - 1% Default - 20%
Smear Warning	This parameter sets the amount of screen smear required to initiate a warning. Minimum - 0.01 sq. mm Maximum - 10 sq. mm Increments - 0.01 sq. mm Default - 0.1 sq. mm
Smear Alarm	This parameter sets the amount of screen smear required to initiate an alarm. Minimum - 0.01 sq. mm Maximum - 10 sq. mm Increments - 0.01 sq. mm Default - 0.2 sq. mm
Paste warning	This parameter sets the amount of paste on pad required to initiate a warning. Minimum - 0% Maximum - 100% Increments - 1% Default - 90%
Paste Alarm	This parameter sets the amount of paste on pad required to initiate an alarm. Minimum - 0% Maximum - 100% Increments - 1% Default - 80%

Parameter	Definition
Align Warning	This parameter sets the amount of X or Y alignment error of the paste to initiate a warning. Minimum - 0.005mm Maximum - 0.25mm Increments - 0.001mm Default - 0.025mm
Align Alarm	This parameter sets the amount of X or Y alignment error of the paste to initiate an alarm. Minimum - 0.005mm Maximum - 0.25mm Increments - 0.001mm Default - 0.03mm
Bridge Warning	This parameter sets the distance between adjacent deposits of paste that if not exceeded initiates a warning. Minimum - 0.01mm Maximum - 0.5mm Increments - 0.005mm Default - 0.05mm
Bridge Alarm	This parameter sets the distance between adjacent deposits of paste that if not exceeded initiates an alarm. Minimum - 0.01mm Maximum - 0.5mm Increments - 0.005mm Default - 0.04mm
Volume Warning	This parameter sets the volume of paste on pad required to initiate a warning. Minimum - 0% Maximum - 100% Increments - 1% Default - 80%
Volume Alarm	This parameter sets the volume of paste on pad required to initiate an alarm. Minimum - 0% Maximum - 100% Increments - 1% Default - 70%
Screen Graphic	This parameter sets the colour of the graphic box drawn around the screen site. The options are: Black White Default - Black This parameter has no function on the Horizon and Infinity machines.
Screen Graphic X	The position of the inspection window. This parameter is used to finely adjust the inspection window in the X direction, any adjustment made affects the site X coord parameter. Minimum - -3.5mm Maximum - 3.5mm Increments - 0.01mm Default - 0mm

Parameter	Definition
Screen Graphic Y	The position of the inspection window. This parameter is used to finely adjust the inspection window in the Y direction, any adjustment made affects the site Y coord parameter. Minimum - -3.5mm Maximum - 3.5mm Increments - 0.01mm Default - 0mm
Board Graphic	This parameter sets the colour of the graphic box drawn around the board site. The options are: Black White Default - White This parameter has no function on the Horizon and Infinity machines.
Board Graphic X	The position of the inspection window. This parameter is used to finely adjust the inspection window in the X direction, any adjustment made affects the site X coord parameter. Minimum - -3.5mm Maximum - 3.5mm Increments - 0.01mm Default - 0mm
Board Graphic Y	The position of the inspection window. This parameter is used to finely adjust the inspection window in the Y direction, any adjustment made affects the site Y coord parameter. Minimum - -3.5mm Maximum - 3.5mm Increments - 0.01mm Default - 0mm
Window Left	This parameter sets the position of the window relative to the centre of the image. The Minimum and Maximum values are calculated from the vision calibration and vary from machine to machine. Increments - 0.1mm Default - -1.5mm
Window Top	This parameter sets the position of the window relative to the centre of the image. The Minimum and Maximum values are calculated from the vision calibration and vary from machine to machine. Increments - 0.1mm Default - -1.5mm
Window Width	This parameter sets the width of the inspection window. The Minimum and Maximum values are calculated from the vision calibration and vary from machine to machine. Increments - 0.1mm Default - 3mm
Window Height	This parameter sets the height of the inspection window. The Minimum and Maximum values are calculated from the vision calibration and vary from machine to machine. Increments - 0.1mm Default - 3mm
Screen Vertical	This parameter sets the level of screen vertical light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8

Parameter	Definition
Board Vertical	This parameter sets the level of board vertical light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8
Screen Oblique	This parameter sets the level of screen oblique light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the green camera only.
Board Oblique	This parameter sets the level of board oblique light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the green camera only.
Screen Inner LR	This parameter sets the level of screen inner left/right light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Screen Inner FR	This parameter sets the level of screen inner front/rear light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Screen Outer LR	This parameter sets the level of screen outer left/right light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Screen Outer FR	This parameter sets the level of screen outer front/rear light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Board Inner LR	This parameter sets the level of board inner left/right light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Board Inner FR	This parameter sets the level of board inner front/rear light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.

Parameter	Definition
Board Outer LR	This parameter sets the level of board outer left/right light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Board Outer FR	This parameter sets the level of board outer front/rear light. Minimum - 0 Maximum - 15 Increments - 1 Default - 8 This parameter is for the silver camera only.
Limit Set Options	This parameter enables the output of these inspections. Blockage Smear Paste Alignment Bridging Volume



265GSX
265Lt

CHAPTER 9

CONSUMABLE REPLENISHMENTS

CONSUMABLE REPLENISHMENTS

INTRODUCTION This chapter describes the general replenishment processes needed for machine husbandry. It details the procedures needed to perform the following tasks:

- Solder paste replenishment.
- Paper and solvent replenishment - Blue USC
- Cleaning cassette and solvent replenishment - Vortex USC
- Filter cassette replacement - Vortex USC
- Fitment of squeegees
- ProFlow cassette change
- ProFlow - paste retention system replacement
- ProFlow - transfer head recharging

Regulations The safety and environmental aspects of machine operation are described. However, it should be noted that local or national regulations may vary for countries outside the UK or EEC. Machine operatives should be conversant with all regulations relating to local conditions.

Competence Level These procedures can only be performed by personnel who have been trained to a minimum of DEK operator level.

PASTE LOADING Two options are provided for loading paste onto the screen, **Manual Load** and **Auto Dispense**. Manual load allows the operator to load paste by hand onto the stencil. Auto dispense loads paste automatically onto the stencil in the correct area, from the paste cartridge located in the paste dispenser on the print carriage. Auto dispense can be programmed into a product file to take place automatically during a print run or either option can be selected, directly from the control console, to take place at the operators discretion.

The print direction option allows the user to select the direction of the next print stroke after a screen change or removal of a screen for cleaning. The option is available prior to pressing **Run** in all machine modes, ie Auto/Single/Stop.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

Manual Loading To load paste prior to print run:

1. Press **Paste Load** (F3).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	-------------------	--------------	--------	-------	---------	--

2. Press **Manual Load** (F2).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	--------------------	--	--------------	--	--------------	--	------

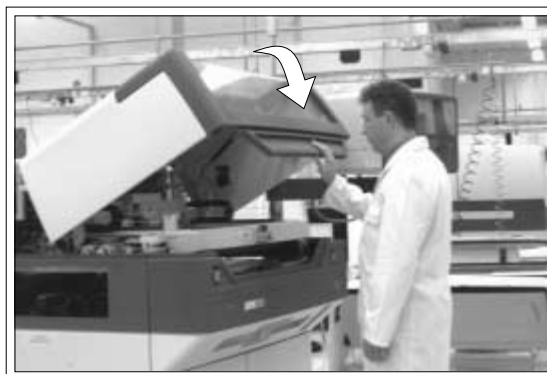
3. Open the printhead cover.



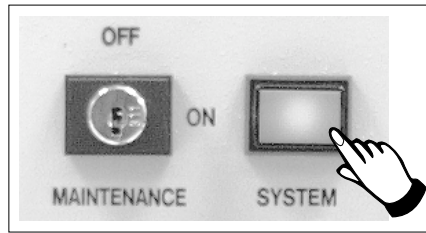
4. Load the solder paste onto the screen.



5. Close the printhead cover.



6. Press the **System** button.



7. Press **Continue** (F1).

Continue							
-----------------	--	--	--	--	--	--	--

8. Press **Exit** (F8).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	-------------	--	--------------	--	--------------	--	-------------

To Load Paste During A Print Run:

1. Press **Paste Load** (F3).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		Exit
---------	------------	-------------------	--------------	--------	-------------	--	------

2. Press **Manual Load** (F2).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	--------------------	--	--------------	--	--------------	--	------

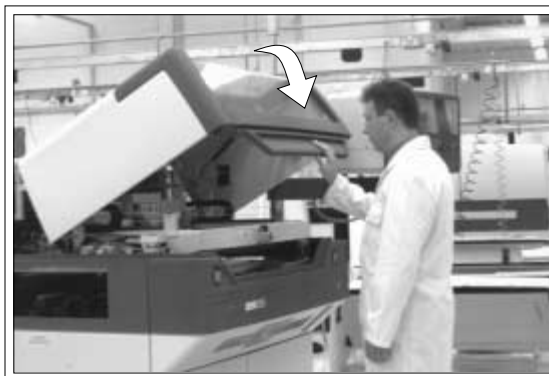
3. Open the printhead cover.



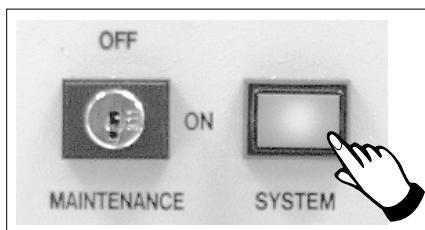
4. Load paste onto screen.



5. Close the printhead cover.



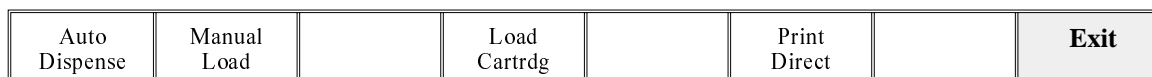
6. Press the **System** button.



7. Press **Continue** (F1).



8. Press **Exit** (F8).



Paste Removal

During continuous printing operations paste residue build up may occur with the same screen in use and with the squeegee option fitted. This build up can affect the print quality of the print process, ie paste in apertures, paste 'tramlining' on the screen and residue on the squeegees.

Before loading paste the operator should ensure that any residue is cleaned off the screen and squeegees.

To clean the screen effectively, it is recommended that the operator removes the screen from the machine during this operation.



WARNING
RECOMMENDED SOLVENTS. ANY SOLVENTS USED MUST COMPLY WITH LOCAL ENVIRONMENTAL GUIDELINES. DEK RECOMMEND USING SOLVENTS THAT ARE ENVIRONMENTALLY FRIENDLY, IE CFC FREE AND WATER BASED. SOLVENTS USED MUST HAVE FAST EVAPORATION RATES AND FLASHPOINT SPECIFICATIONS GREATER THAN 39° C.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.

**WARNING**

PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

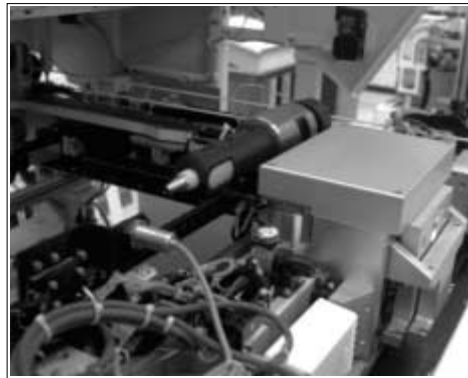
Remove paste from the screen and squeegees with a spatula and place in a suitable container. Smear deposits are removed using a suitable cleaning cloth dampened with a suitable solvent.

NOTE

Waste paste and contaminated cleaning cloths are to be disposed of in accordance with local authority regulations.

Auto Dispense

An alternative to manual loading of solder paste to the screen is given with the provision of an automatic paste dispenser. This is mounted to the rear of the print carriage.



The paste dispenser uses either a 1 Kg or 500g cartridge. The 500g cartridge requires the fitting of a sleeve which is an option. This enables any loading of paste to be carried out without the need for the operator to handle the paste.

A slug inside the cartridge, travels down the cartridge as the paste is used. A proximity sensor fitted to the side of the dispenser detects the metal content of the paste. When the cartridge is empty the sensor initiates a **'Print Medium Low. Please Replenish'** warning window to the operator.

Programming into a Product File

The paste dispense parameters can be setup when editing a product file for a new product, although it may be more convenient to set these after the product has been run for a while and paste requirements have been determined.

The parameters to be edited that affect the operation of the paste dispenser are:

Paste Dispense Rate:

This determines the frequency of the cycling of the paste dispenser. The setting is gauged by running the product and noting the number of prints before paste replenishment is required. This can be set to any number between 0 to 100 in increments of 1.

Paste Dispense Speed:

This determines the speed at which the paste dispenser travels across the screen and hence the amount of paste which is dispensed. This parameter needs to be set in conjunction with the Paste Dispense Rate. This can be set to any number between 10mm/s and 100mm/s in increments of 1mm/s.

To Enter the Paste Dispense Parameters From the Status Page

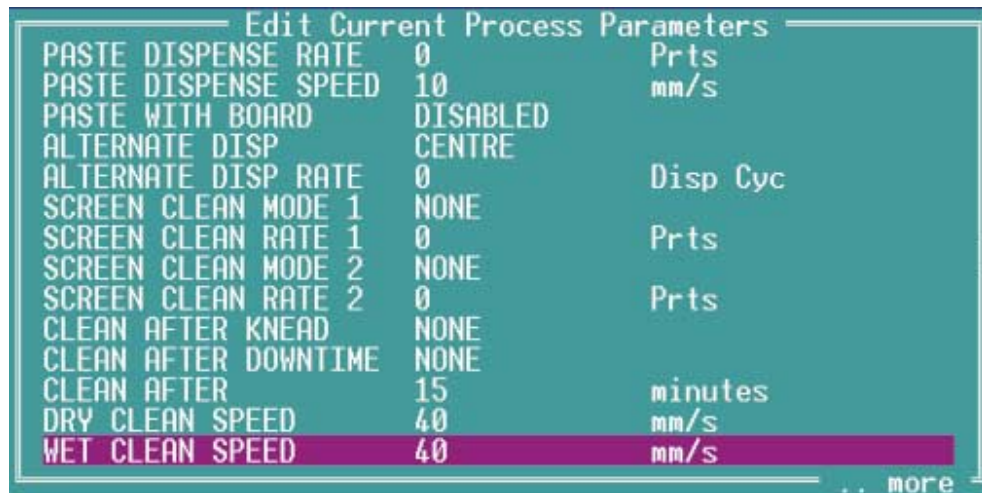
1. Press **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	------------	--------------	--------	--------------	---------	--

2. Press **Edit Data** (F3).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

The following window is displayed:



3. Using the **Next** and **Previous** keys (F4 - F5) select the paste dispense rate.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	-------	-------	------

4. Using the **Incr.** and **Decr.** keys (F6 -F7) set the required rate.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

5. Using the **Next** key (F4) select the paste dispense speed.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	----------	-------	-------	------

6. Using the **Incr.** and **Decr.** keys (F6 - F7) set the required speed.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

7. Press **Exit** (F8).

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	-------------

8. Press **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

Dispensing Paste at Random Intervals

The operator can cycle the paste dispenser at random intervals and before a print run in addition to any preprogrammed cycles.

To load paste prior to a print run:

1. Press **Paste Load** (F3).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	-------------------	--------------	--------	-------	---------	--

2. Press **Auto Dispense** (F1).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
----------------------	-------------	--	--------------	--	--------------	--	------

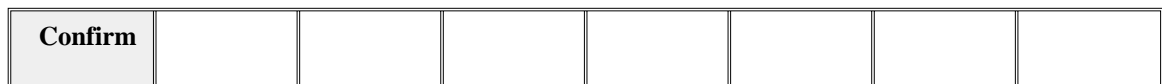
3. If the paste dispenser has sufficient paste the dispenser carries out an automatic dispense, go to Step 13. If the paste dispenser is low on paste a warning window is displayed. The warning window varies, depending on the setting of the consumable action option in set preferences. If the set preference is set to warn, continue with Step 4. If the set preference is set to pause or suspend go to Step 8.

4. If the set preference is set to warn, the following window is displayed:

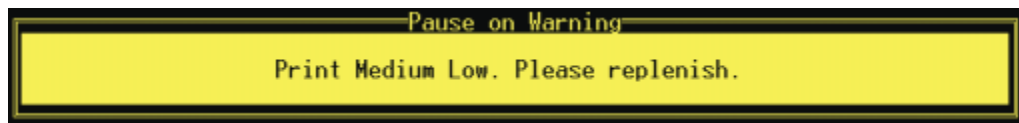


The tricoloured beacon shows amber/green.

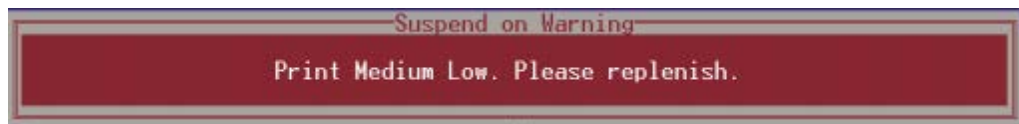
5. Select **Confirm** (F1).



6. To replace the paste cartridge carry out the Fitting a New Paste Cartridge procedure, later in this section.
7. Repeat Steps 1, 2 and 13.
8. If the set preference is set to pause, the following window and menu bar is displayed:



If the set preference is set to suspend, the following window and menu bar is displayed:



In both cases the tricoloured beacon shows red.

9. Select **Refill Paste** (F1).

Refill Paste							Cancel
---------------------	--	--	--	--	--	--	--------

NOTE

*If either the under screen cleaner paper or solvent are low or the Vortex cleaning cassette has expired and are reported first, the refill paste option is not displayed. In this case select **Cancel** until **Refill Paste** is displayed in the menu bar.*

The message ‘**Select Load Cart to load the cartridge or exit to abort.**’ is displayed.

10. Select **Load Cart.** (F1).

Load Cart.							Exit
-------------------	--	--	--	--	--	--	------

The print carriage drives to the front of the machine and the dispenser rises to the vertical position. A message is displayed on the screen ‘**Open Cover and Replace Paste Cartridge**’.

11. To replace the paste cartridge carry out Steps 3-10 of Fitting a New Paste Cartridge procedure, later in this section.

12. Repeat Steps 1, 2 and 13.

After the dispense routine has been completed:

13. Press **Exit** (F8).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	-------------	--	--------------	--	--------------	--	-------------

To Load Paste During a Print Run

1. Press **Paste Load** (F3).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
---------	------------	-------------------	--------------	--------	-------------	--	--

2. Press **Auto Dispense** (F1).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
----------------------	-------------	--	--------------	--	--------------	--	------

3. If the paste dispenser has sufficient paste the dispenser carries out an automatic dispense, go to Step 22. If the paste dispenser is low on paste a warning window is displayed. The warning window varies, depending on the setting of the consumable action option in set preferences. If the set preference is set to warn, continue with Step 4. If the set preference is set to pause go to Step 10. If the set preference is set to suspend go to Step 16.

4. If the set preference is set to warn, the following window is displayed:



The tricoloured beacon shows amber/green.

5. Select **Confirm** (F1).

Confirm							
----------------	--	--	--	--	--	--	--

6. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

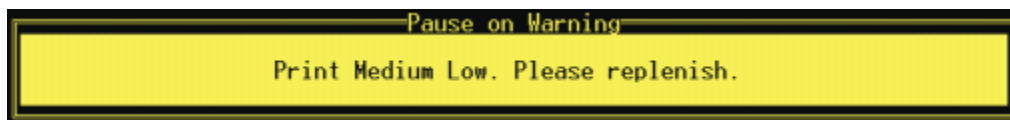
7. To replace the paste cartridge carry out Fitting a New Paste Cartridge procedure, later in this section.

8. Select **Run** (F1).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	------------	--------------	--------	-------	---------	--------

9. Repeat Steps 1, 2 and 22.

10. If the set preference is set to pause, the following window is displayed:



The tricoloured beacon shows red.

11. Select **Refill Paste** (F1).

Refill Paste								Defer
---------------------	--	--	--	--	--	--	--	-------

The message ‘**Select Load Cart to load the cartridge or exit to abort.**’ is displayed.

NOTE

Select **Defer** to continue printing without replacing the paste cartridge.

12. Select **Load Cart.** (F1).

Load Cart.								Exit
-------------------	--	--	--	--	--	--	--	------

The message ‘**Open the cover and load the new paste cartridge then close Cover, press System Button and press Continue**’ is displayed.

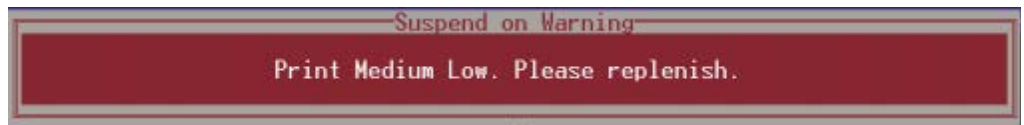
13. Carry out Steps 3-9 of Fitting a New Paste Cartridge procedure, later in this section.

14. Select **Continue** (F1).

Continue	Open Cover							
-----------------	------------	--	--	--	--	--	--	--

15. Go to Step 21.

16. If the set preference is set to suspend, the following window is displayed:



The tricoloured beacon shows red.

17. Select **Refill Paste** (F1).

Refill Paste							End Run
---------------------	--	--	--	--	--	--	---------

The message ‘**Select Load Cart to load the cartridge or exit to abort.**’ is displayed.

NOTE

Select **End Run** to terminate the print run without replacing the paste cartridge.

18. Select **Load Cart.** (F1).

Load Cart.							Exit
-------------------	--	--	--	--	--	--	------

The message ‘**Open the cover and load the new paste cartridge then close Cover, press System Button and press Continue**’ is displayed.

19. Carry out Steps 3-9 of Fitting a New Paste Cartridge procedure, later in this section.

20. Select **Continue** (F1).

Continue	Open Cover						
-----------------	------------	--	--	--	--	--	--

21. Select **Auto Dispense** (F1).

Auto Dispense	Manual Load		Load Cart.		Print Directn		Exit
----------------------	-------------	--	------------	--	---------------	--	------

22. After the dispense routine has been completed, press **Exit** (F8).

Auto Dispense	Manual Load		Load Cart.		Print Directn		Exit
---------------	-------------	--	------------	--	---------------	--	-------------

Fitting a New
Paste Cartridge

It is necessary at intervals to fit a new paste cartridge into the paste dispenser. If there is no cartridge in the dispenser or the cartridge is empty, the warning window **‘Print Medium Low. Please Replenish.’** is displayed.

If the consumable action option in set preferences is set to suspend, the paste dispenser is checked to ensure availability of paste, before allowing a print run to start. If paste isn’t available the warning window **‘Print Medium Low. Please Replenish.’** is displayed.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

To replace a paste cartridge carry out the following:

1. Press **Paste Load** (F3).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	-------------------	--------------	--------	-------	---------	--

2. Press **Load Cartrdg** (F4).

Auto Dispense	Manual Load		Load Cartrdg		Print Direct		Exit
---------------	-------------	--	---------------------	--	--------------	--	------

The print carriage drives to the front of the machine and the dispenser rises to the vertical position. A message is displayed on the screen **‘Open Cover and Replace Cartridge’**.

3. Open the printhead cover.



4. Remove the empty cartridge by unscrewing the cap at the rear of the paste dispense tube to allow it to be withdrawn.



5. Unscrew the nozzle from the old cartridge and insert it into the new cartridge.



6. Fit the new cartridge into the dispenser.



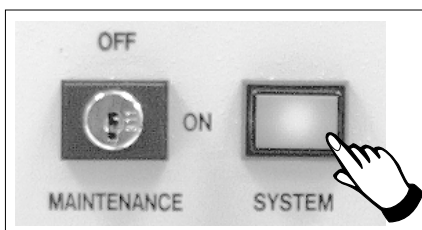
7. Screw the end cap onto the dispenser ensuring that it is only fingertight.



8. Close the printhead cover.



9. Press the **System** button.

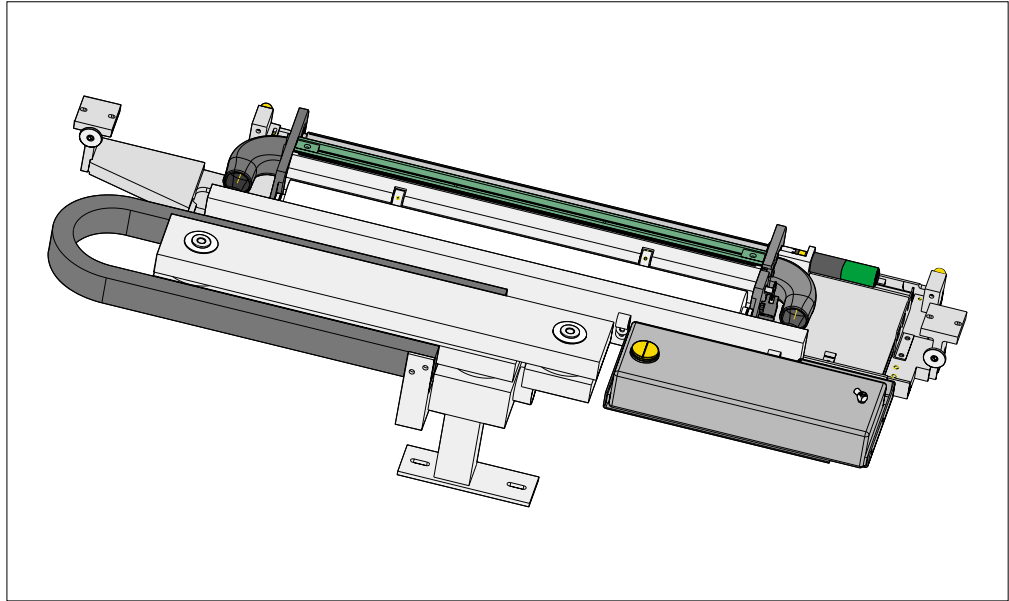


10. Press **Exit** (F8).

Auto Dispense	Manual Load		Load Cartrdg		Print Directn		Exit
---------------	-------------	--	--------------	--	---------------	--	-------------

BLUE UNDERSCREEN CLEANER

Provision is made on the printer for automatic underscreen cleaning. This is carried out using a lint free paper roll which can be dry or wetted with an appropriate solvent. A combination of wet and dry wipes can be programmed.



The cleaning options can be programmed into a particular product file so that they take place at preprogrammed intervals or they can be selected, directly from the control console, to take place at the operators discretion.

Programming Screen Clean Operation into a Product File

The screen clean parameters can be setup when editing a product file, while setting up a new product. It may be more convenient to set these after the product has been setup and printed and screen cleaning requirements have been decided upon.

The parameters to be edited that affect the operation of the underscreen cleaner are:

Clean Screen Rate

This parameter sets the number of print cycles between the cycling of the underscreen cleaner. This can be set at any number between 0 to 200 in increments of 1.

Clean Screen Modes

These parameters determine the modes of operation for the screen cleaner. Each mode can have a cleaning sequence with up to six sweeps, each of which can be set to VAC, DRY, WET or NONE.

Sweeps set with NONE option cause no action to be taken during the sequence. For example, the settings:

DRY, NONE, NONE, DRY, NONE, WET and

DRY, DRY, WET, NONE, NONE, NONE

Both carry out two consecutive operations, directly followed by one WET cleaning operation.

The default setting is NONE for all six steps.

Solvent Advice

The following solvents **MUST NOT** be used in the underscreen cleaner. However, this list is not complete and does not mean that any solvent not mentioned is compatible, with DEK machines.

- Rosstech 106 FE
- Rosstech 162 ND
- Acetone

DEK are continuously evaluating alternative solvents. If you wish to use a particular type of solvent, but are unsure of its suitability for DEK machines, please contact the DEK Customer Support Group.

NOTE

Rosstech 147FD is used within DEK manufacturing division and has been found to be compatible with DEK underscreen cleaner units. If you are unsure about a particular solvent please contact DEK Customer Support Group.

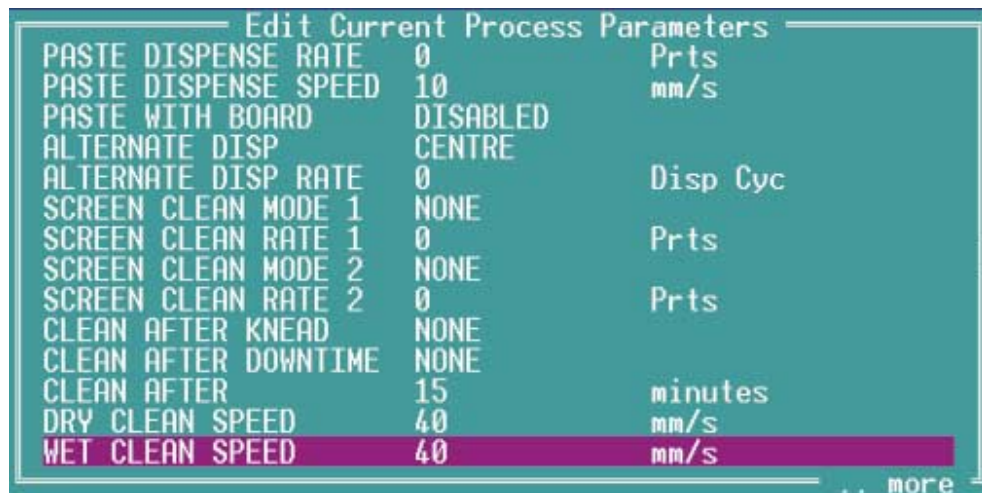
1. Press **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	------------	--------------	--------	--------------	---------	--

2. Press **Edit Data** (F3).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

The following window is displayed:



3. Use the **Next** and **Previous** keys (F4 - F5) to highlight the screen clean rate.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	-------	-------	------

4. Use the **Incr.** and **Decr.** keys (F6 - F7) to set the screen clean rate. This can be set at any number between 0 and 200 in increments of 1.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

5. Use the **Previous** key (F5) to highlight the screen clean mode. This parameter determines the mode of operation of the screen cleaner.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	-----------------	-------	-------	------

6. Press the **Incr.** or **Decr.** keys (F6 - F7) to enter the screen clean mode.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

The Screen Clean Mode window is displayed:

Screen Clean Mode 1					
Sweep Number					
1	2	3	4	5	6
WET	DRY	DRY	NONE	NONE	NONE

7. Use the **Left** and **Right** keys (F2 - F3) to highlight the next sweep number to be changed.

	Left	Right			Incr.	Decr.	Exit
--	-------------	--------------	--	--	-------	-------	------

8. Use the **Incr.** and **Decr.** keys (F6 - F7) to select the operation required for the highlighted sweep. The four options are: VAC, DRY, WET and NONE.

	Left	Right			Incr.	Decr.	Exit
--	------	-------	--	--	--------------	--------------	------

9. If the six stage sequence is setup as required, go to the next step, otherwise return to Step 7.

10. Press **Exit** (F8).

	Left	Right			Incr.	Decr.	Exit
--	------	-------	--	--	-------	-------	-------------

11. Press **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

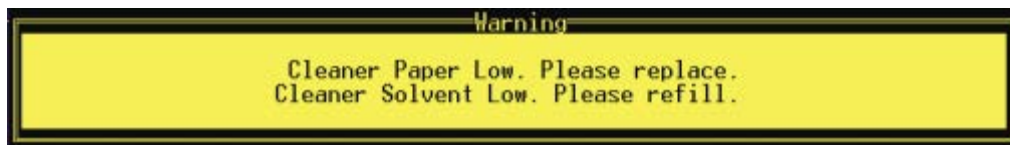
Paper and Solvent Replenishment

Paper and solvent replenishment can take place with the cleaner unit in the printer. When paper or solvent needs replenishment a warning window is automatically displayed on the monitor. The warning window varies, depending on the setting of the consumable action option in set preferences. The message in the warning window depends on whether the solvent or paper or both require replenishment. The procedure varies, depending on whether the replenishment is prior to a print run or during a print run.

Replenishment Prior to a Print Run:

If the set preference is set to warn, continue with Step 1. If the set preference is set to pause or suspend go to Step 4.

1. If the set preference is set to warn, the following window is displayed:



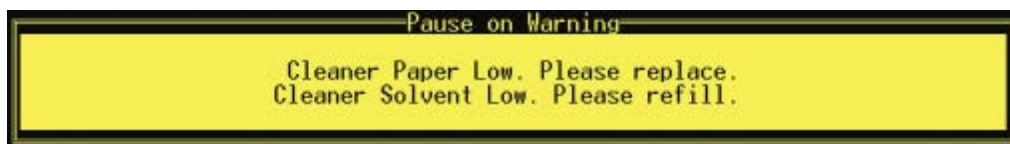
The tricoloured beacon shows amber/green.

2. Select **Confirm** (F1).

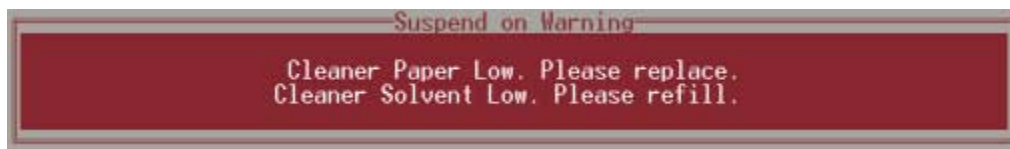


3. Go to Step 17.

4. If the set preference is set to pause, the following window and menu bar is displayed:



If the set preference is set to suspend, the following window and menu bar is displayed:



In both cases the tricoloured beacon shows red.

5. Select **Cancel** (F8).



6. Go to Step 17.

Replenishment During a Print Run:

If the set preference is set to warn, continue with Step 7. If the set preference is set to pause go to Step 11. If the set preference is set to suspend go to Step 15.

7. If the set preference is set to warn, the following window is displayed:



The tricoloured beacon shows amber/green.

8. Select **Confirm** (F1).

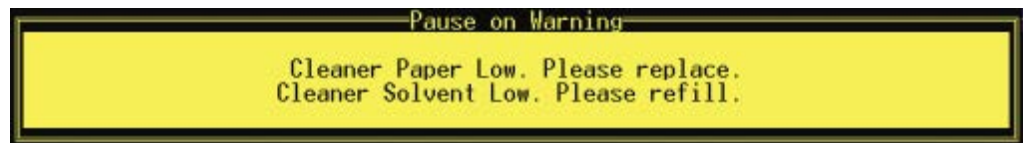
Confirm							
----------------	--	--	--	--	--	--	--

9. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

10. Go to Step 17.

11. If the set preference is set to pause, the following window is displayed:



The tricoloured beacon shows red.

12. Select **Defer** (F8).

							Defer
--	--	--	--	--	--	--	--------------

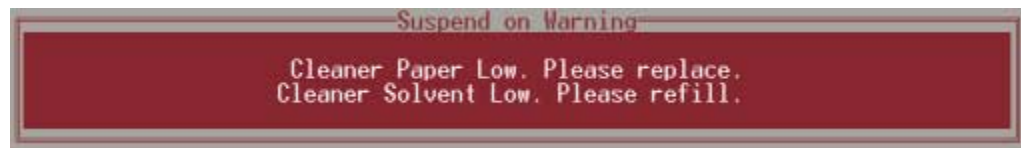
The print run continues.

13. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

14. Go to Step 17.

15. If the set preference is set to suspend, the following window is displayed:



The tricoloured beacon shows red.

16. Select **End Run** (F8).

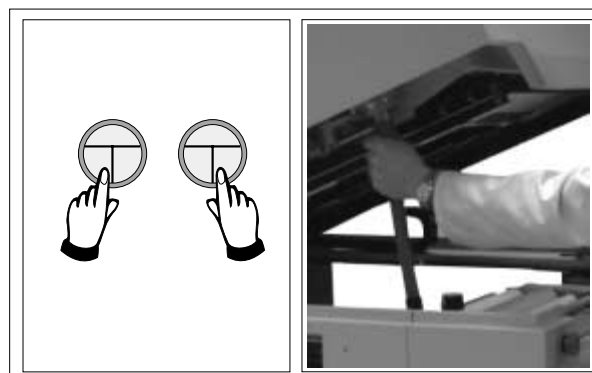
							End Run
--	--	--	--	--	--	--	----------------

17. Press **Head** (F2).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	-------------	------------	--------------	--------	-------	---------	--------

The message '**Raise Head using 2-button Control**' is displayed.

18. Raise the printhead using two button control. Fit the printhead support.



Solvent Replenishment



WARNING
RECOMMENDED SOLVENTS. ANY SOLVENTS USED MUST COMPLY WITH LOCAL ENVIRONMENTAL GUIDELINES. DEK RECOMMEND USING SOLVENTS THAT ARE ENVIRONMENTALLY FRIENDLY, IE CFC FREE AND WATER BASED. SOLVENTS USED MUST HAVE FAST EVAPORATION RATES AND FLASHPOINT SPECIFICATIONS GREATER THAN 39° C.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.



WARNING
SOLVENT SOLUTION. DO NOT MIX SOLVENT SOLUTIONS. FLUSH THE SOLVENT TANK THOROUGHLY WHEN CHANGING TO A DIFFERENT SOLVENT SOLUTION.

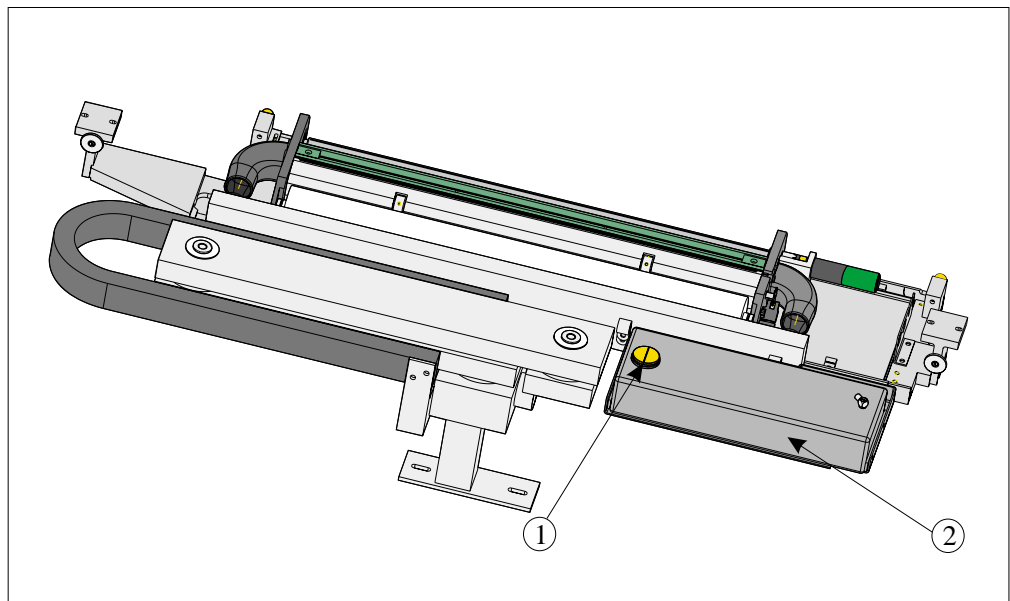


WARNING
SOLVENT SPRAY. THE UNDERSCREEN CLEANER SPRAYS A FINE JET OF SOLVENT SOLUTION ON TO THE CLEANER. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN.

1. Remove the solvent tank cap (1) from the solvent tank (2).

NOTE

Numbers in brackets refer to figure below.

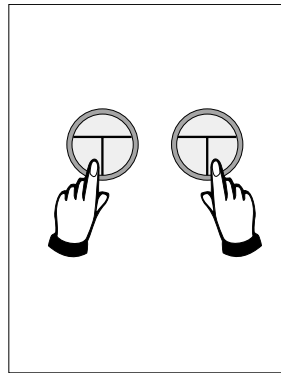


- Using a suitable container refill the tank and replace the cap.
- Select **Prime Solvent** (F6).

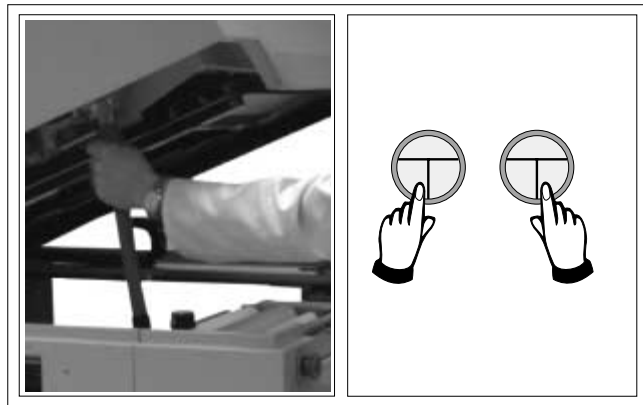
	Head	Toggle Clamp		Prime Paper	Prime Solvent		
--	------	-----------------	--	----------------	--------------------------	--	--

The message **'Press the two control buttons to prime solvent'** is displayed.

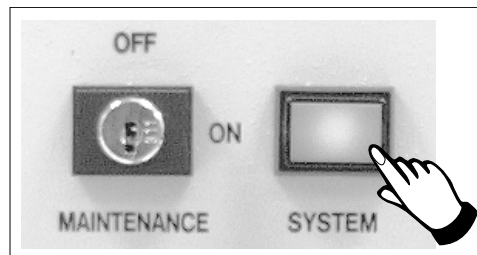
- Prime the solvent using the two button control.



- Remove the head support. Lower the printhead using two button control.



- Press the **System** button.



Paper Replenishment

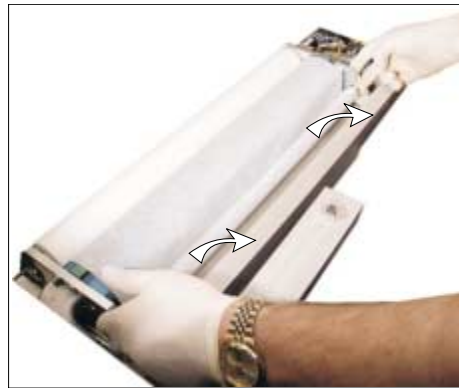
**WARNING**

PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

**WARNING**

FLAMMABLE. THE USED PAPER ROLL CONTAINS RESIDUES OF UNDERSCREEN CLEANER FLUID AND SOLDER PASTE. OBSERVE MANUFACTURERS' RECOMMENDED DISPOSAL INSTRUCTIONS.

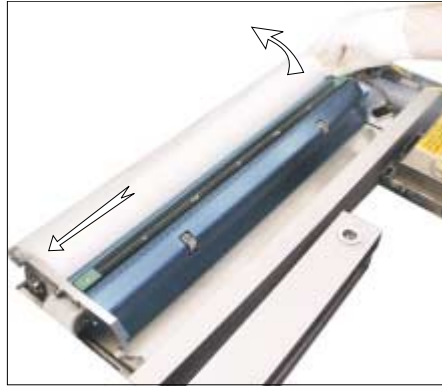
1. Lift the empty paper roll from the front of the cleaner.



2. Remove the paper spindles from both ends of the empty paper roll.



3. Remove the take up roll from the rear of the unit by easing the roll to the left against spring pressure, until the right hand end is clear of the motor drive spindle in the right hand end plate. Lift the take up roll clear of the unit.



4. Rotate the left hand flange a quarter turn to the right to unlock the paper roll rod from the paper roll shaft.



5. Rotate the paper roll end flange a quarter turn to the left and right, whilst gently pulling the rod clear of the paper roll.



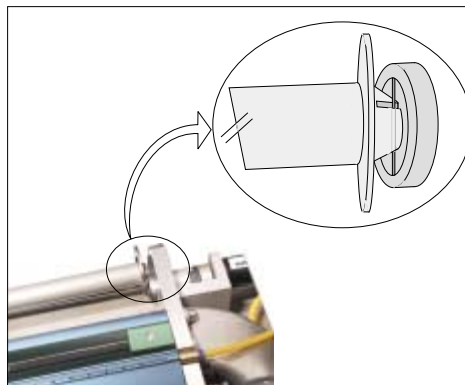
- Slide the contaminated cleaner paper from the paper roll shaft. Dispose of the contaminated cleaner paper in accordance with manufacturers' recommended disposal instructions.



- Fit the left hand shaft end into the cleaner left hand end plate.



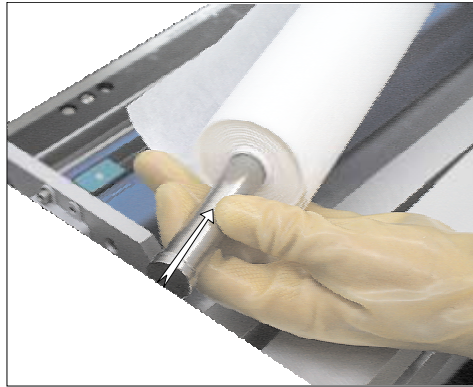
- Locate the right hand end of the paper roll shaft into the motor drive spindle ensuring the shaft is correctly seated.



9. Rotate the paper roll shaft until the groove is at 45° to the horizontal, facing towards the top rear printhead cover of the machine.



10. Refit the paper spindles to both ends of the new paper roll. Ensure both faces of the new paper roll are flush.



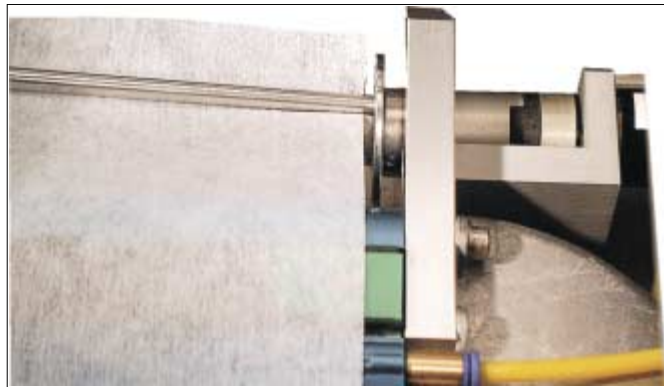
11. Install the new clean paper roll at the front of the unit, ensure the paper is routed from underneath the roll towards the rear of the unit.



12. Feed the cleaner paper across the body assembly, ensuring the cleaner paper is aligned parallel to the unit end plate.



13. Insert the paper roll rod into the right hand flange of the shaft. Lay the rod along the shaft's groove trapping the cleaner paper between the shaft and rod.



14. Rotate the end flange of the rod towards the rear of the machine to lock the rod onto the shaft.



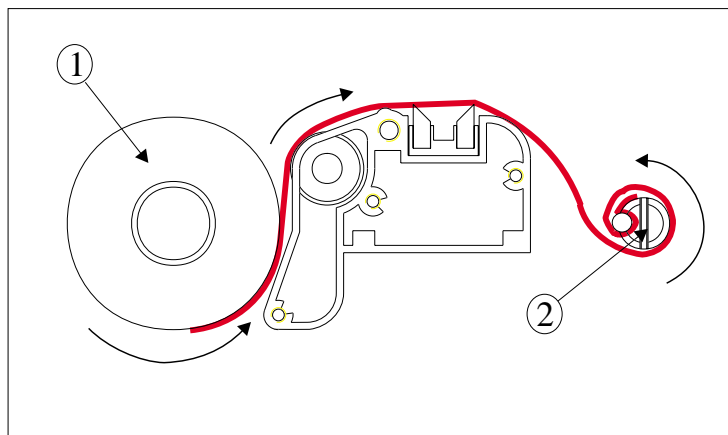
15. Rotate the take up roll one complete revolution against the motor clutch to tension the cleaner paper across the cleaner squeegee assembly.



16. Ensure the cleaner paper has been routed correctly, from underneath the paper roll (1) rearwards across the squeegee assembly and threaded between paper rod and shaft (2).

NOTE

Figures in brackets refer to the diagram below.

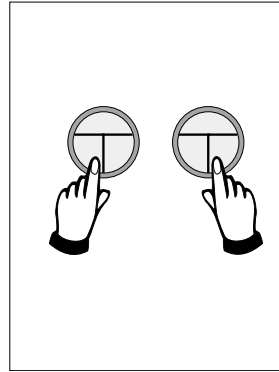


17. Press **Prime Paper (F5)** key.

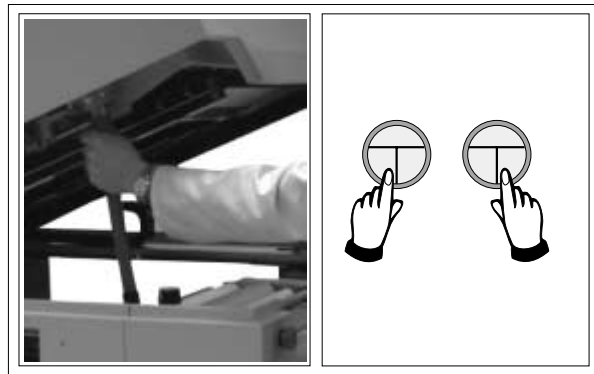
The message '**Press the two control buttons to feed paper**' is displayed.

	Head	Toggle Clamp		Prime Paper	Prime Solvent		
--	------	-----------------	--	------------------------	------------------	--	--

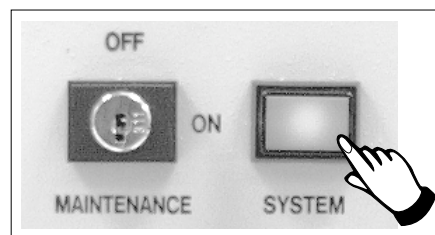
18. Using the two button control, prime the paper ensuring it feeds correctly.



19. Remove the head support. Lower the printhead using two button control.

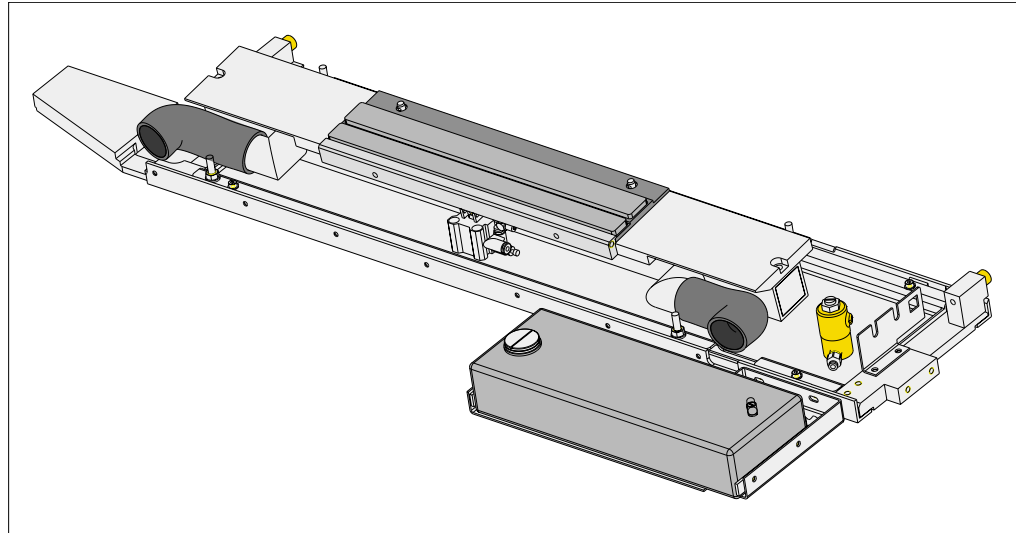


20. Press the **System** button.



VORTEX UNDERSCREEN CLEANER

Provision is made on the printer for automatic underscreen cleaning. This is carried out using a cleaning cassette which contains a wet and dry cell. The wet cell is impregnated with an appropriate solvent. A cleaning cycle consists of a single return stroke incorporating a wet and dry wipe with or without vacuum.



The cleaning options can be programmed into a particular product file so that they take place at preprogrammed intervals or they can be selected, directly from the MMI, to take place at the operators discretion.

**Programming
Screen Clean
Operation into a
Product File**

The screen clean parameters can be setup when editing a product file, while setting up a new product. It may be more convenient to set these after the product has been setup and printed and screen cleaning requirements have been decided upon.

The parameters to be edited that affect the operation of the underscreen cleaner are listed below with a definition of each as an aid to setup:

Parameter	Definition
Front Start Offset	The distance, in from the front edge of the board, at which the cleaner is to finish. Minimum -60mm Maximum 60mm Default 30mm Increment 1mm
Rear Start Offset	The distance, in from the rear edge of the board, at which the cleaner is to start. Minimum -60mm Maximum 60mm Default 30mm Increment 1mm

Parameter	Definition
Vortex Cassette Life	This parameter sets the number of cleaning strokes that are applied before a cleaning cassette is replaced. Minimum 0 Maximum 200 Default 20 Increment 1
Vortex Clean Rate	This parameter sets the frequency (in print cycles) at which screen cleaning occurs. Minimum 0 Maximum 200 Default 0 Increment 1
Vortex Solvent Rate	This parameter sets the frequency (in cleaning cycles) at which solvent is dispensed. Minimum 1 Maximum 10 Default 1 Increment 1
Vortex Vacuum Start	The distance, in from the front edge of the board, where vacuum is applied. Minimum Vacuum Stop Maximum Board Width Default 0mm Increment 1mm
Vortex Vacuum Stop	The distance, in from the front edge of the board, where vacuum application is stopped. Minimum -100mm Maximum Vacuum Stop Default 0mm Increment 1mm
Vortex Vacuum Rate	This parameter sets the frequency (in cleaning cycles) at which vacuum is applied. Minimum 1 Maximum 10 Default 1 Increment 1
Vortex Vacuum Period	This parameter sets the period for which vacuum is applied. Minimum 1 sec Maximum 10 secs Default 5 secs Increment 1 sec
Dry Clean Speed	This parameter sets the speed of the screen clean return stroke. Minimum 10mm/sec Maximum 120mm/sec Default 30mm/sec Increment 1mm/sec

Solvent Advice The following solvents **MUST NOT** be used in the underscreen cleaner. However, this list is not complete and does not mean that any solvent not mentioned is compatible, with DEK machines.

- Rosstech 106 FE
- Rosstech 162 ND
- Acetone

DEK are continuously evaluating alternative solvents. If you wish to use a particular type of solvent, but are unsure of its suitability for DEK machines, please contact the DEK Customer Support Group.

1. Press **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	------------	--------------	--------	--------------	---------	--

2. Press **Edit Data** (F3).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	------------------	----------------	---------------	----------------	-----------------	------

The following window is displayed:

Edit Current Process Parameters		
UNDER CLEARANCE	19.0	mm
SEPARATION SPEED	2.0	mm/s
SEPARATION DISTANCE	3.0	mm
BOARD COUNT	0	boards
PRINT DEPOSITS	1	
PASTE WHILE CLEAN	Disabled	
PASTE RIDGE REMOVAL	Enabled	
VORTEX CLEAN RATE	0	Print Cycle
VORTEX SOLVENT RATE	1	Clean Cycle
VORTEX VACUUM START	Board Width	mm
VORTEX VACUUM STOP	0	mm
VORTEX VACUUM RATE	1	Clean Cycle
VORTEX VACUUM PERIOD	5	Second
DRY CLEAN SPEED	40	mm/s
..more		

3. Use the **Next** and **Previous** keys (F4 - F5) to highlight the required parameter.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	-------------	-----------------	-------	-------	------

4. Use the **Incr.** and **Decr.** keys (F6 -F7) to set the required value of the selected parameter.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	--------------	--------------	------

5. Repeat Steps 3 and 4 for all remaining parameters.

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	------

6. Press **Save** (F2) on completion of parameter setup.

	Save		Next	Previous	Incr.	Decr.	Exit
--	-------------	--	------	----------	-------	-------	------

7. Press **Exit** (F8).

	Save		Next	Previous	Incr.	Decr.	Exit
--	------	--	------	----------	-------	-------	-------------

8. Press **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

Cleaning Cassette and Solvent Replenishment

The cleaning cassette and solvent replenishment can take place with the cleaner unit in the printer. When the cleaning cassette or solvent needs replenishment a warning window is automatically displayed on the monitor. The warning window varies, depending on the setting of the consumable action option in set preferences. The message in the warning window depends on whether the cleaning cassette or solvent or both require replenishment. The procedure varies, depending on whether the replenishment is prior to a print run or during a print run.

Replenishment Prior to a Print Run:

If the set preference is set to warn, continue with Step 1. If the set preference is set to pause or suspend go to Step 4.

1. If the set preference is set to warn, the following window is displayed:



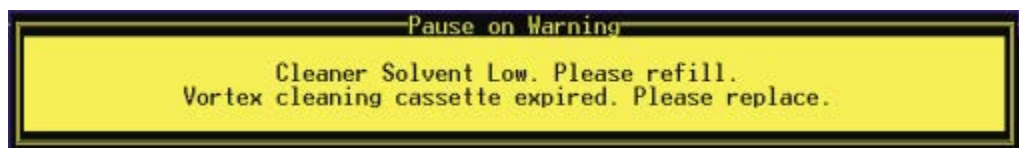
The tricoloured beacon shows amber/green.

2. Select **Confirm** (F1).

Confirm							
----------------	--	--	--	--	--	--	--

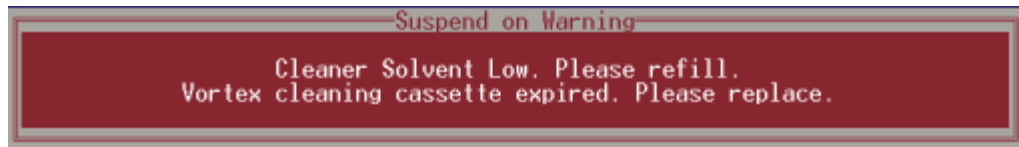
3. Go to Step 17.

4. If the set preference is set to pause, the following window and menu bar is displayed:



							Cancel
--	--	--	--	--	--	--	---------------

If the set preference is set to suspend, the following window and menu bar is displayed:



							Cancel
--	--	--	--	--	--	--	---------------

In both cases the tricoloured beacon shows red.

5. Select **Cancel** (F8).

							Cancel
--	--	--	--	--	--	--	---------------

6. Go to Step 17.

Replenishment During a Print Run:

If the set preference is set to warn, continue with Step 7. If the set preference is set to pause go to Step 11. If the set preference is set to suspend go to Step 15.

7. If the set preference is set to warn, the following window is displayed:



The tricoloured beacon shows amber/green.

8. Select **Confirm** (F1).

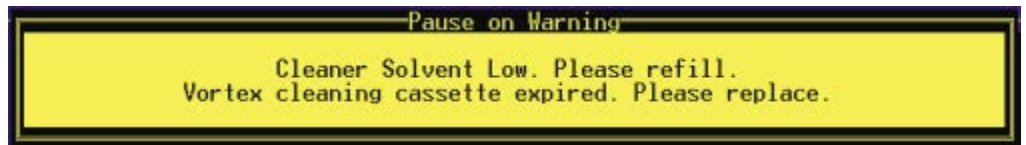
Confirm							
----------------	--	--	--	--	--	--	--

9. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

10. Go to Step 17.

11. If the set preference is set to pause, the following window is displayed:



The tricoloured beacon shows red.

12. Select **Defer** (F8).

							Defer
--	--	--	--	--	--	--	--------------

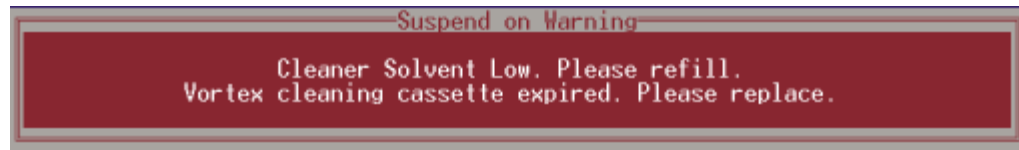
The print run continues.

13. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

14. Go to Step 17.

15. If the set preference is set to suspend, the following window is displayed:

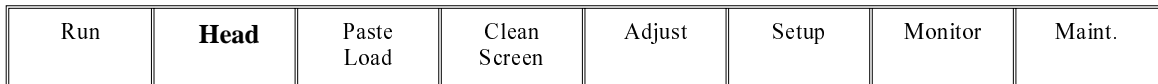


The tricoloured beacon shows red.

16. Select **End Run** (F8).

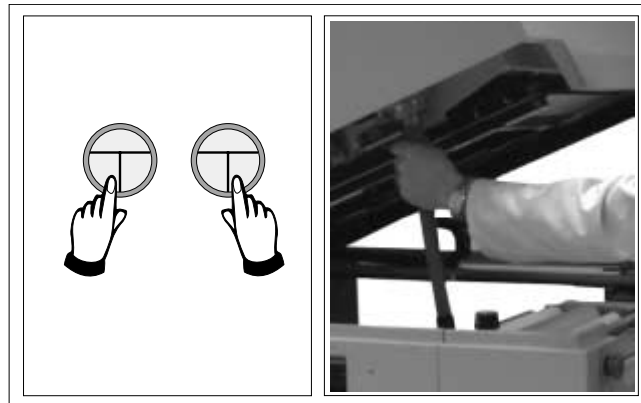


17. Press **Head** (F2).



The message '**Raise Head using 2-button Control**' is displayed.

18. Raise the printhead using two button control. Fit the printhead support.



Solvent Replenishment



WARNING
RECOMMENDED SOLVENTS. ANY SOLVENTS USED MUST COMPLY WITH LOCAL ENVIRONMENTAL GUIDELINES. DEK RECOMMEND USING SOLVENTS THAT ARE ENVIRONMENTALLY FRIENDLY, IE CFC FREE AND WATER BASED. SOLVENTS USED MUST HAVE FAST EVAPORATION RATES AND FLASHPOINT SPECIFICATIONS GREATER THAN 39° C.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.



WARNING
SOLVENT SOLUTION. DO NOT MIX SOLVENT SOLUTIONS. FLUSH THE SOLVENT TANK THOROUGHLY WHEN CHANGING TO A DIFFERENT SOLVENT SOLUTION.

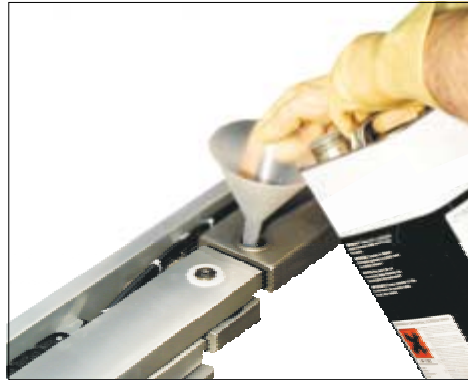


WARNING
SOLVENT SPRAY. THE UNDERSCREEN CLEANER SPRAYS A FINE JET OF SOLVENT SOLUTION ON TO THE CLEANER. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN.

1. Remove the solvent tank cap from the solvent tank.



- Using a suitable container refill the tank and replace the cap.

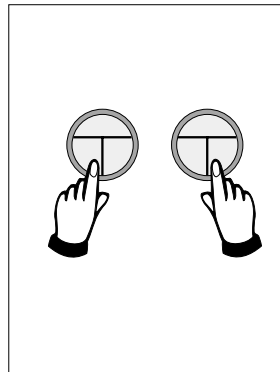


- Press **Prime Solvent** (F6).

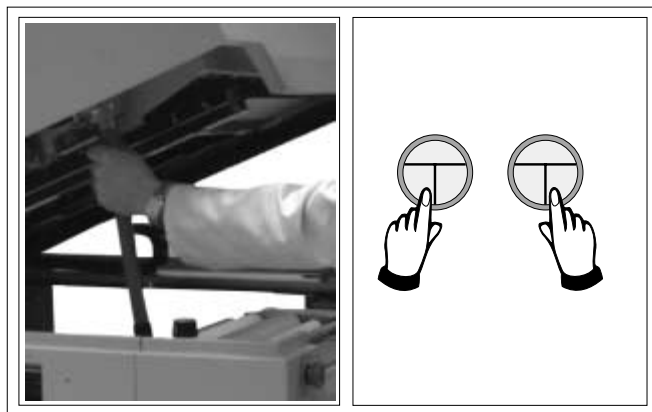
	Head	Toggle Clamp			Prime Solvent		
--	------	-----------------	--	--	--------------------------	--	--

The message '**Press the two control buttons to prime solvent**' is displayed.

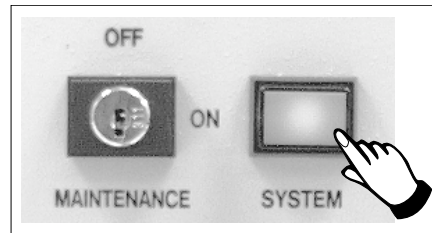
- Prime the solvent using the two button control.



- Remove the head prop. Lower the printhead using two button control.



8. Press the **System** button.



Cleaning Cassette
Replenishment



WARNING

PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.



WARNING

FLAMMABLE. THE USED VORTEX CLEANING CASSETTE AND VORTEX FILTER CASSETTE CONTAIN RESIDUES OF UNDERSCREEN CLEANER FLUID AND SOLDER PASTE. OBSERVE MANUFACTURERS' RECOMMENDED DISPOSAL INSTRUCTIONS.

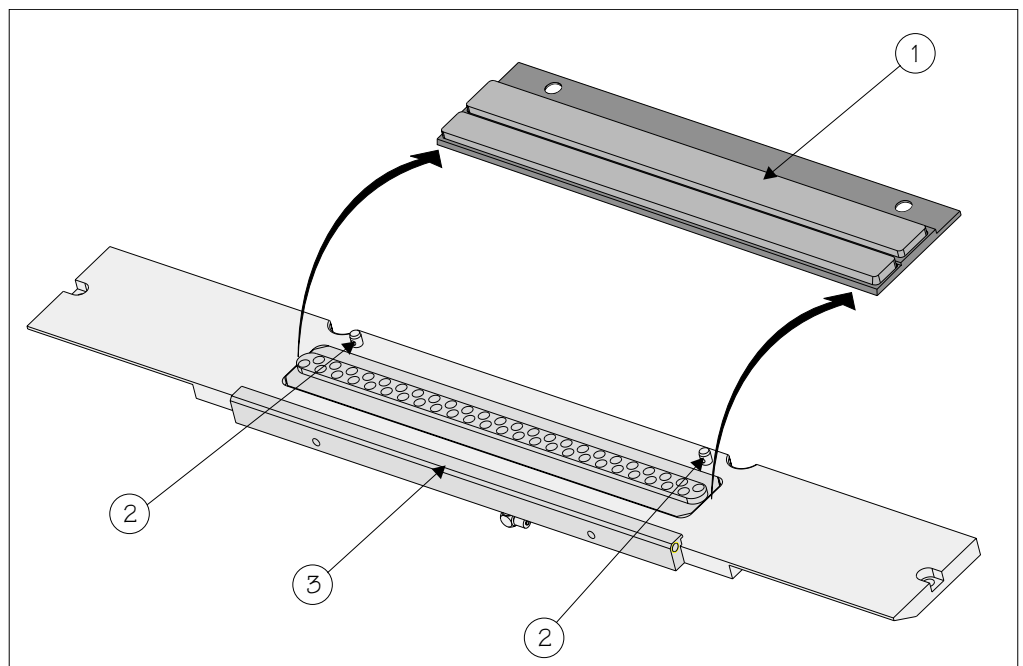
NOTE

The cleaning cassettes come in different sizes, ensure the correct size is replaced.

- Carefully lift the cleaning cassette (1) clear of the two pip pins (2) and slide out from beneath the solvent bar (3).

NOTE

Numbers in brackets refer to figure below.



2. Dispose of the used cleaning cassette in accordance with local authority guidelines.
3. If the filter cassette is to be replaced continue with Step 4. If the filter cassette is not being replaced go to Step 7.

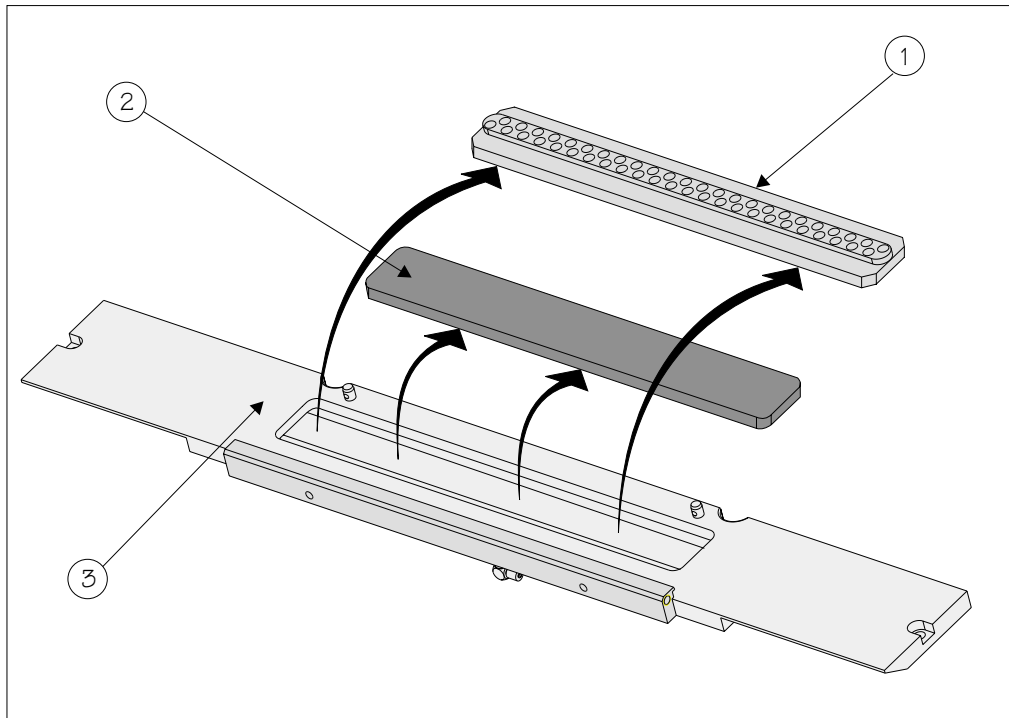
NOTE

The filter cassettes come in different sizes, ensure the correct size is replaced.

4. Remove the vacuum grid (1) from the mounting tray (3). Remove the filter cassette (2) from the mounting tray (3).

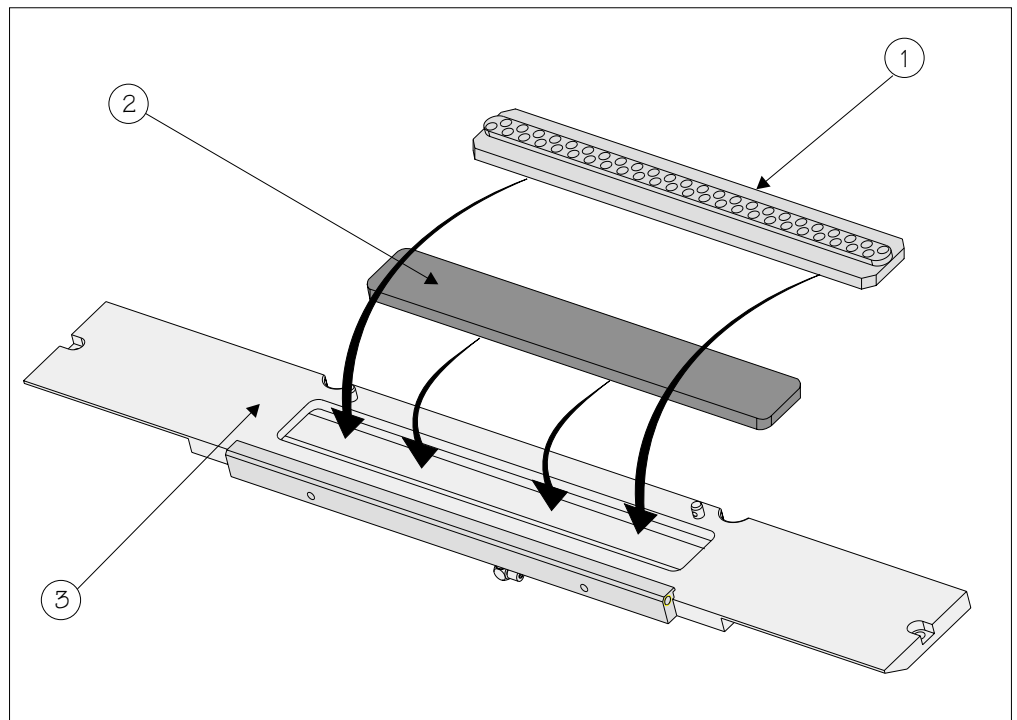
NOTE

Numbers in brackets refer to figure below.



5. Dispose of the used filter cassette in accordance with local authority guidelines.

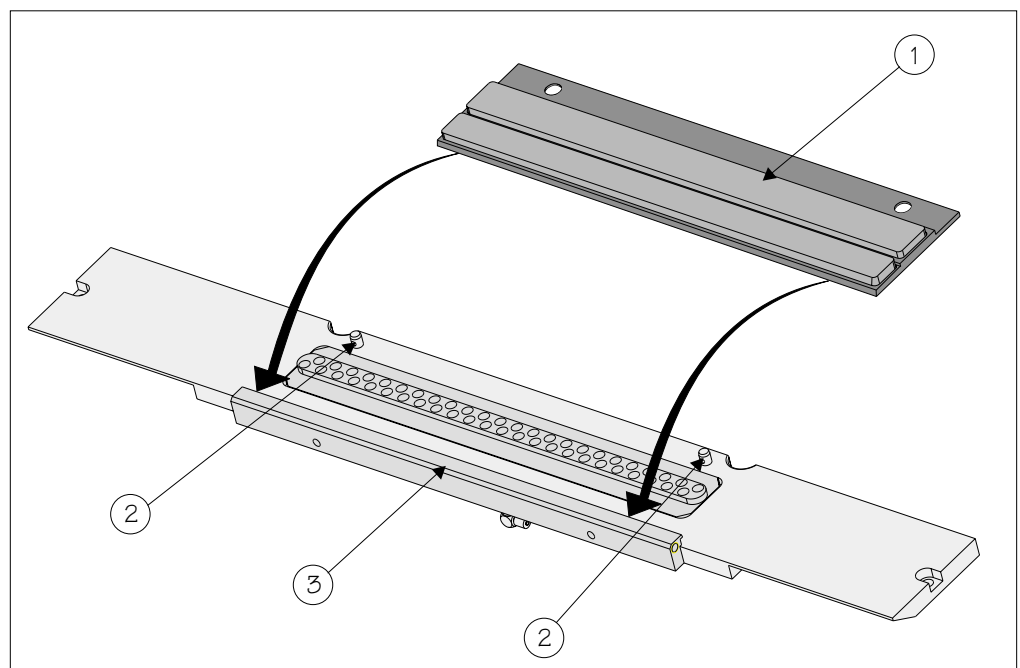
6. Fit the new filter cassette (2) into the mounting tray (3). Fit the vacuum grid (1) into the mounting tray (3).



7. Fit the edge of the new cleaning cassette (1) beneath the solvent bar (3) and snap into place on the two pip pins (2).

NOTE

Numbers in brackets refer to figure below.

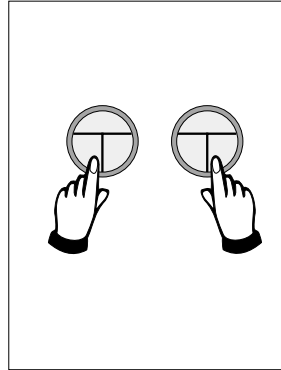


8. Press **Prime Solvent** (F6).

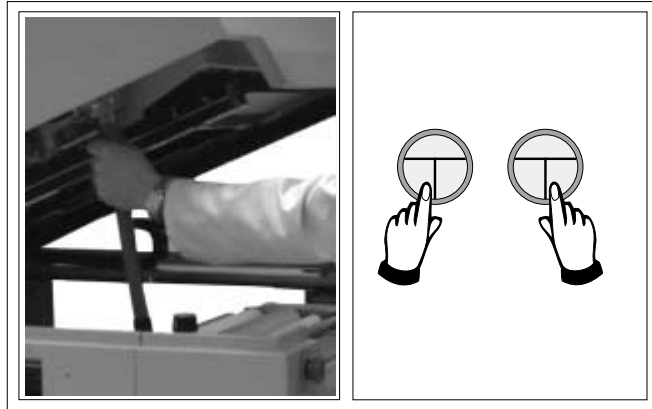
	Head	Toggle Clamp			Prime Solvent		
--	------	-----------------	--	--	--------------------------	--	--

The message '**Press the two control buttons to prime solvent**' is displayed.

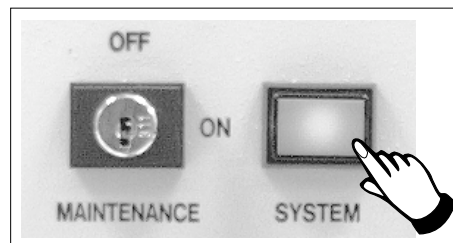
9. Prime the solvent using the two button control.



10. Remove the head prop. Lower the printhead using two button control.



11. Press the **System** button.



SQUEEGEES

Fitting the Squeegees

From the Status page:

1. Press **Setup** (F6).

Run	Head	Paste Load	Clean Screen	Adjust	Setup	Monitor	
-----	------	------------	--------------	--------	--------------	---------	--

2. Press **Setup Squeegee** (F4).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	-----------------------	---------------	----------------	-----------------	------

3. Press **Change Squeegee** (F1).

Change Squeegee	Calibrat Heights						Exit
------------------------	------------------	--	--	--	--	--	------

4. Open the printhead cover.



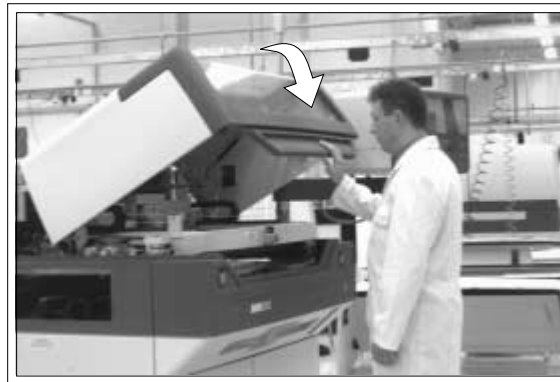
The front and rear squeegees must be fitted in the correct positions. Each squeegee has a key-way machined into it to ensure that it cannot be incorrectly fitted.

5. Fit the rear squeegee onto the rear squeegee mount tightening the thumbscrews until they are fingertight.

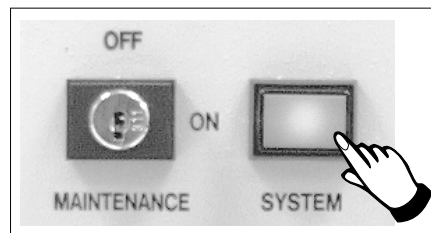
6. Fit the front squeegee onto the front squeegee mount again ensuring that the thumbscrews are only finger tight.



7. Close printhead cover.



8. Press the **System** button.



9. Press **Continue** (F1).

Continue							
----------	--	--	--	--	--	--	--

10. Press **Calibrat Heights** (F2).

Change Squeegee	Calibrat Heights						Exit
-----------------	-------------------------	--	--	--	--	--	------

The message ‘**Ensure correct squeegees are fitted**’ is displayed.

11. Press **Continue** (F1).

Continue	Restore Defaults						Exit
-----------------	------------------	--	--	--	--	--	------

The message ‘**Calibrating pressure heights - Do NOT open covers!**’ is displayed.

12. Press **Exit** (F8).

Change Squeegee	Calibrat Heights						Exit
-----------------	------------------	--	--	--	--	--	-------------

13. Press **Exit** (F8).

Mode	Load Data	Edit Data	Setup Squeegee	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------	---------------	----------------	-----------------	-------------

PROFLOW

ProFlow Cassette Change

It is necessary at intervals to fit a new ProFlow cassette into the ProFlow transfer head. If the cassette is empty at the end of a print stroke, the warning window ‘Print Medium Low. Please Replenish.’ is displayed.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

NOTE
When using a ProFlow transfer head for the first time or if the transfer head conditioning chamber has been cleaned, ie free from solder paste. The conditioning chamber must be primed first with the print medium. Two ProFlow cassettes are required, the first ProFlow cassette is used to prime the conditioning chamber. The second ProFlow cassette is fitted ready for machine operation.

The ProFlow cassette can be fitted or changed prior to and during a print run.

Prior to a Print Run The ProFlow cassette can be fitted or changed prior to selecting **Run**.

1. If ProFlow is in the home position continue from Step 2. If ProFlow is in the contact position go to Step 19.

2. Select **Setup** (F6).

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	-------------	--------------	--------	--------------	---------	--------

3. Select **Setup ProFlow** (F4).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------------	---------------	----------------	-----------------	------

4. Select **Load Cassette** (F4).

Change ProFlow			Load Cassette				Exit
----------------	--	--	----------------------	--	--	--	------

The message **‘Has the ProFlow unit’s base cover been removed?’** is displayed.

5. If the ProFlow unit’s base cover is still fitted continue with Step 6. If the ProFlow unit’s base cover has been removed go to Step 12.

6. Select **Remove Cover** (F8).

Yes							Remove Cover
-----	--	--	--	--	--	--	---------------------

The message **‘Open the printer cover and remove the ProFlow unit’s base cover’** is displayed.

7. Open the printhead cover.

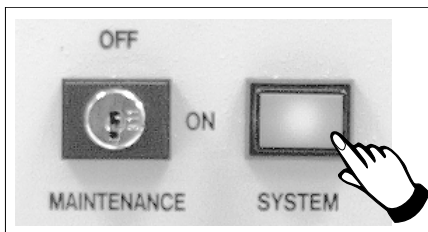


8. Remove the ProFlow unit’s base cover.

9. Close the front printhead cover.



10. Press the **System** button.



11. Select **Exit** (F8).

							Exit
--	--	--	--	--	--	--	-------------

12. Select **Yes** (F1).

Yes							Remove Cover
------------	--	--	--	--	--	--	--------------

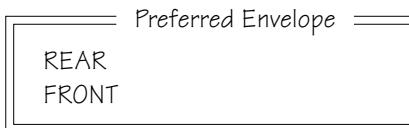
The message **'The ProFlow unit will be placed in the REAR envelope'** is displayed.

13. If the ProFlow unit is required to be placed in another envelope continue with Step 14. If the ProFlow unit is required to be placed in the machine preferred envelope go to Step 18.

14. Select **Select Another** (F8).

Proceed							Select Another
---------	--	--	--	--	--	--	-----------------------

The following window is displayed:



15. Use the **Next** or **Previous** keys (F4 or F5) to highlight **Front**.

Use			Next	Previous			Exit
-----	--	--	-------------	-----------------	--	--	------

16. Select **Use** (F1).

Use			Next	Previous			Exit
------------	--	--	------	----------	--	--	------

17. Select **Exit** (F8).

Use			Next	Previous			Exit
-----	--	--	------	----------	--	--	-------------

18. Select **Proceed** (F1).

Proceed							Select Another
----------------	--	--	--	--	--	--	-------------------

The ProFlow unit is placed in contact with the screen.

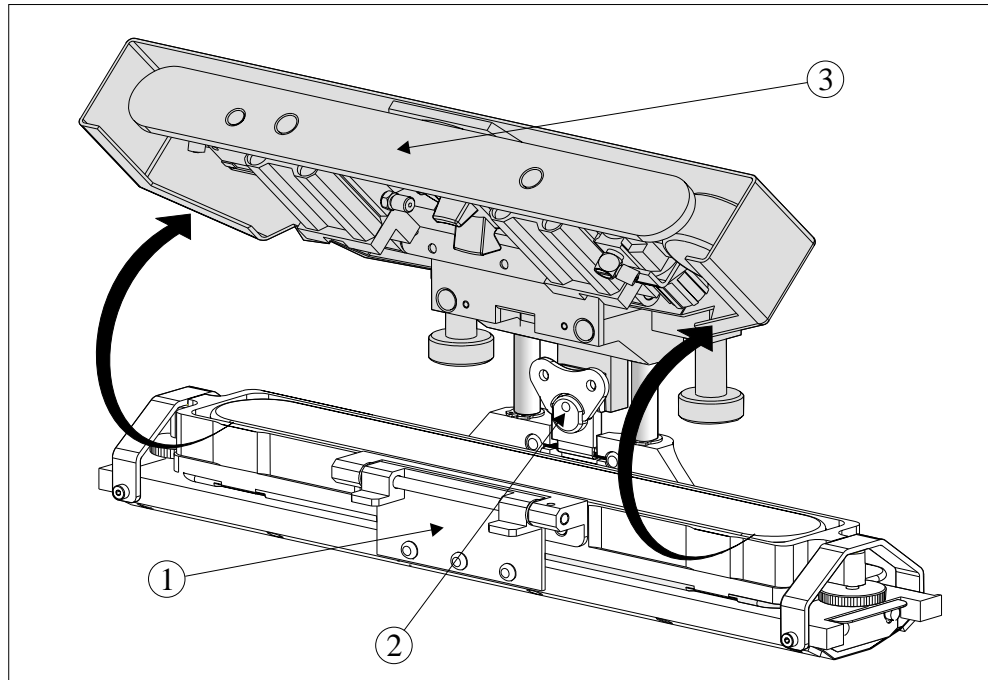
19. Open the front printhead cover.



20. To gain access to the transfer head (1), release the latch on the front of the pressure mechanism (2) and raise the mechanism forward and upwards to engage the spring locking device.

NOTE

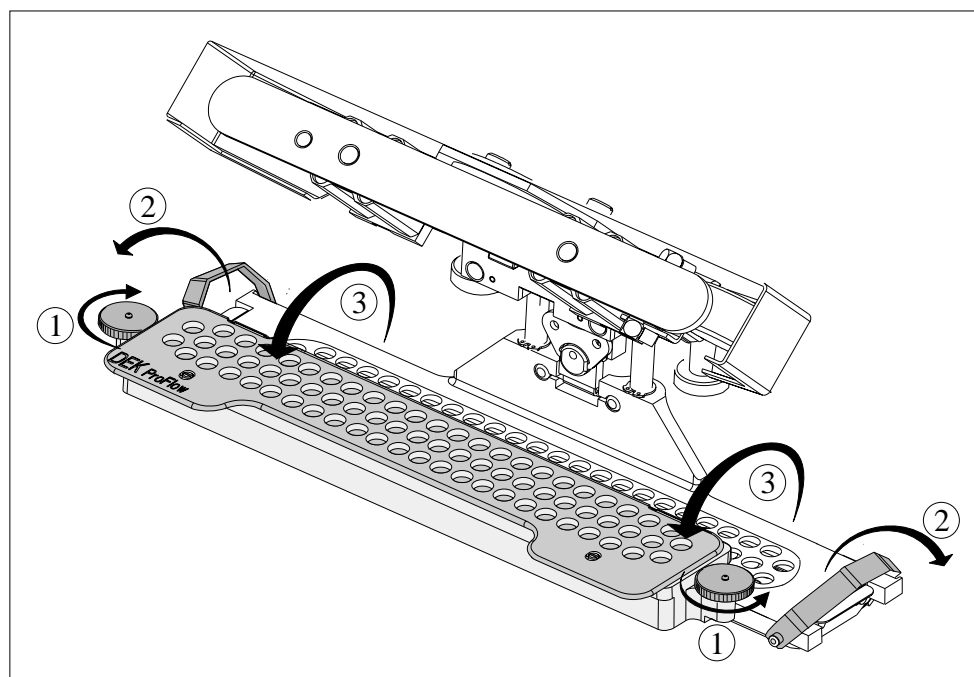
Numbers in brackets refer to figure below.



21. To release the carrier from the transfer head, unscrew the thumbscrews (1) at each end of the carrier to loosen the clamp brackets. Hinge the clamp brackets (2) outwards. Hinge the carrier and ProFlow cassette (3) towards the front of the machine exposing the top of the ProFlow cassette.

NOTE

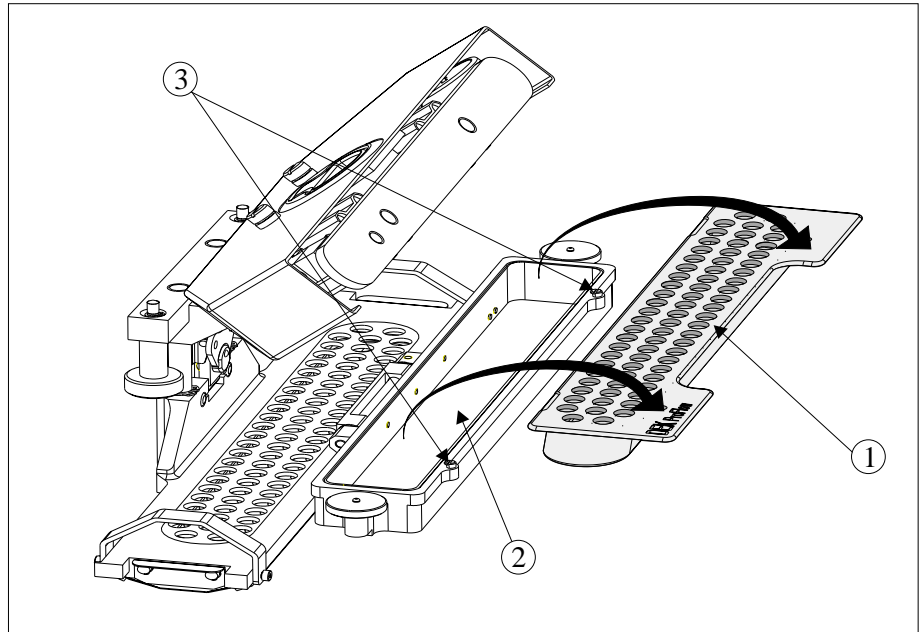
Numbers in brackets refer to figure below.



22. Carefully remove the empty ProFlow cassette (1) from the carrier (2) by lifting the ProFlow cassette clear of the retaining pins (3) sited at each end of the carrier unit.

NOTE

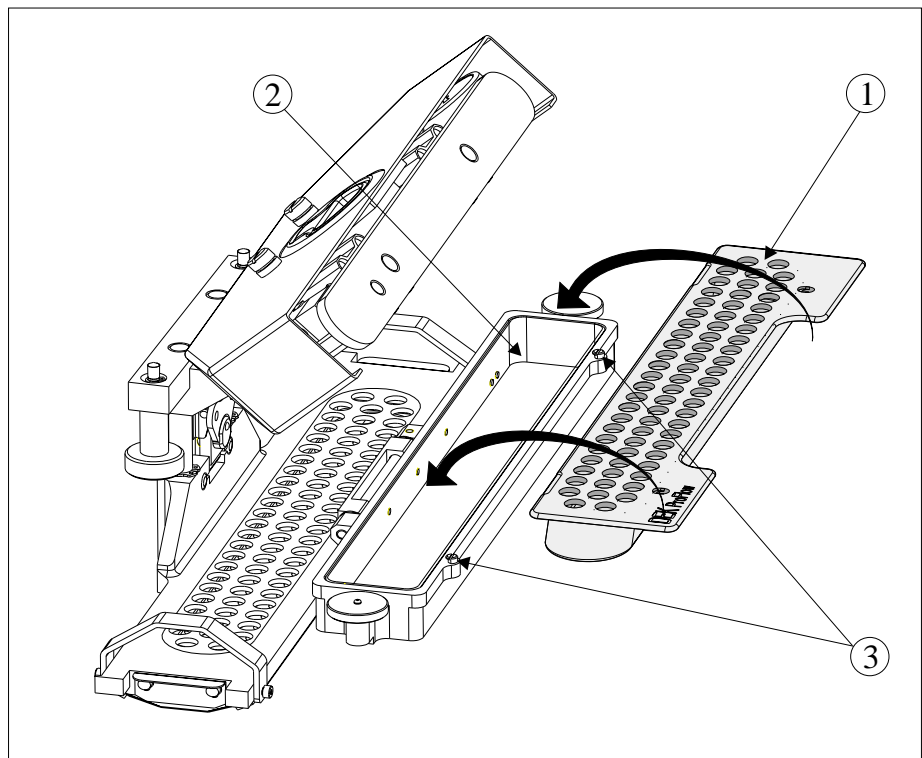
Numbers in brackets refer to figure below



23. Dispose of the empty cassette in accordance with local authority guidelines.
24. Fit a new cassette (1) into the carrier recess (2) and secure into place with the retaining pins (3).

NOTE

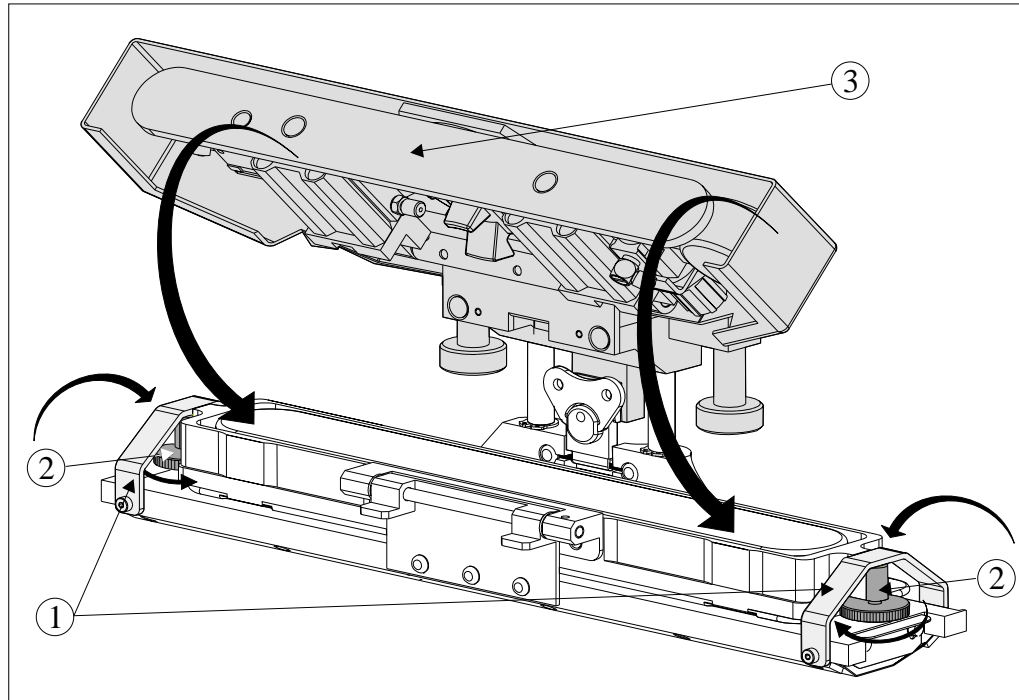
Numbers in brackets refer to figure below.



25. Remove the sealing foil from the top of the new ProFlow cassette.
26. Hinge the clamp brackets (1) inwards to position the cassette onto the transfer head, secure in place by tightening the thumbwheels (2).
27. Lower the pressure mechanism (3) in place until the latch engages.

NOTE

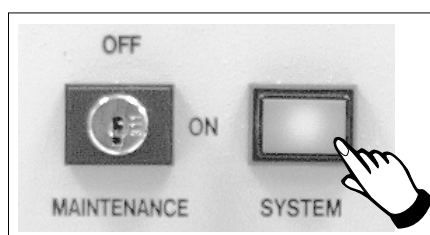
Numbers in brackets refer to figure below.



28. Close the printhead cover.



29. Press the **System** button.



30. Select **Setup ProFlow** (F4).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------------	---------------	----------------	-----------------	------

31. Select **Prime ProFlow** (F6).

Change ProFlow			Load Cassette		Prime ProFlow		Exit
----------------	--	--	---------------	--	----------------------	--	------

If it is possible to carry out the prime ProFlow function the message **'Performing knead off-image.'** is displayed. If it is not possible the function is deferred until it is, ie at the start of a print stroke with a board loaded.

32. Select **Exit** (F8).

Change ProFlow			Load Cassette		Prime ProFlow		Exit
----------------	--	--	---------------	--	---------------	--	-------------

33. Select **Exit** (F8).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	---------------	---------------	----------------	-----------------	-------------

During a Print Run

When the ProFlow cassette needs replenishment a warning window is automatically displayed on the monitor. The warning window varies, depending on the setting of the consumable action option in set preference.

If the set preference is set to warn, continue with Step 1. If the set preference is set to pause go to Step 6. If the set preference is set to suspend go to Step 11.

1. If the set preference is set to warn, the following window is displayed:



The tricoloured beacon shows amber/green.

2. Select **Confirm** (F1).

Confirm							
----------------	--	--	--	--	--	--	--

3. Select **End Run** (F1).

End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

4. Carry out Steps 19-33 of **Prior to a Print Run** procedure, earlier in this section.

5. Select **Run** (F1). The print run resumes.

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	-------------	--------------	--------	-------	---------	--------

6. If the set preference is set to pause, the following window is displayed:



The tricoloured beacon shows red.

7. Select **Refill Paste** (F1).

Refill Paste							Defer
---------------------	--	--	--	--	--	--	-------

The message **'Open the cover and change the ProFlow cassette.'** is displayed.

8. Select **Open Cover** (F2).

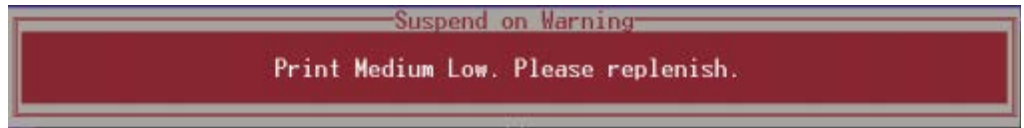
Continue	Open Cover						
----------	-------------------	--	--	--	--	--	--

9. Carry out Steps 19-33 of **Prior to a Print Run** procedure, earlier in this section.

10. Select **Continue** (F1). The print run resumes.

Continue	Open Cover						
-----------------	------------	--	--	--	--	--	--

11. If the set preference is set to suspend, the following window is displayed:



The tricoloured beacon shows red.

12. Select **Refill Paste** (F1).

Refill Paste							End Run
---------------------	--	--	--	--	--	--	----------------

The message ‘**Open the cover and change the ProFlow cassette.**’ is displayed.

13. Select **Open Cover** (F2).

Continue	Open Cover						
----------	-------------------	--	--	--	--	--	--

14. Carry out Steps 19-33 of Prior to a Print Run procedure, earlier in this section.

15. Select **Continue** (F1). The print run resumes.

Continue	Open Cover						
-----------------	------------	--	--	--	--	--	--

Paste Retention System Replacement

Due to wear over prolonged periods, it is necessary to replace the wiper foils and end retainers (skis). An obvious indication of blade deterioration is print medium left deposited on the screen after a print cycle.

Replace the wiper foils and end retainers (skis) as follows:



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.



WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

1. Press **Setup** (F6).

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	----------------	-----------------	--------	--------------	---------	--------

2. Press **Setup ProFlow** (F4).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling		Exit
------	--------------	--------------	--------------------------	------------------	-------------------	--	------

3. Press **Change ProFlow** (F1).

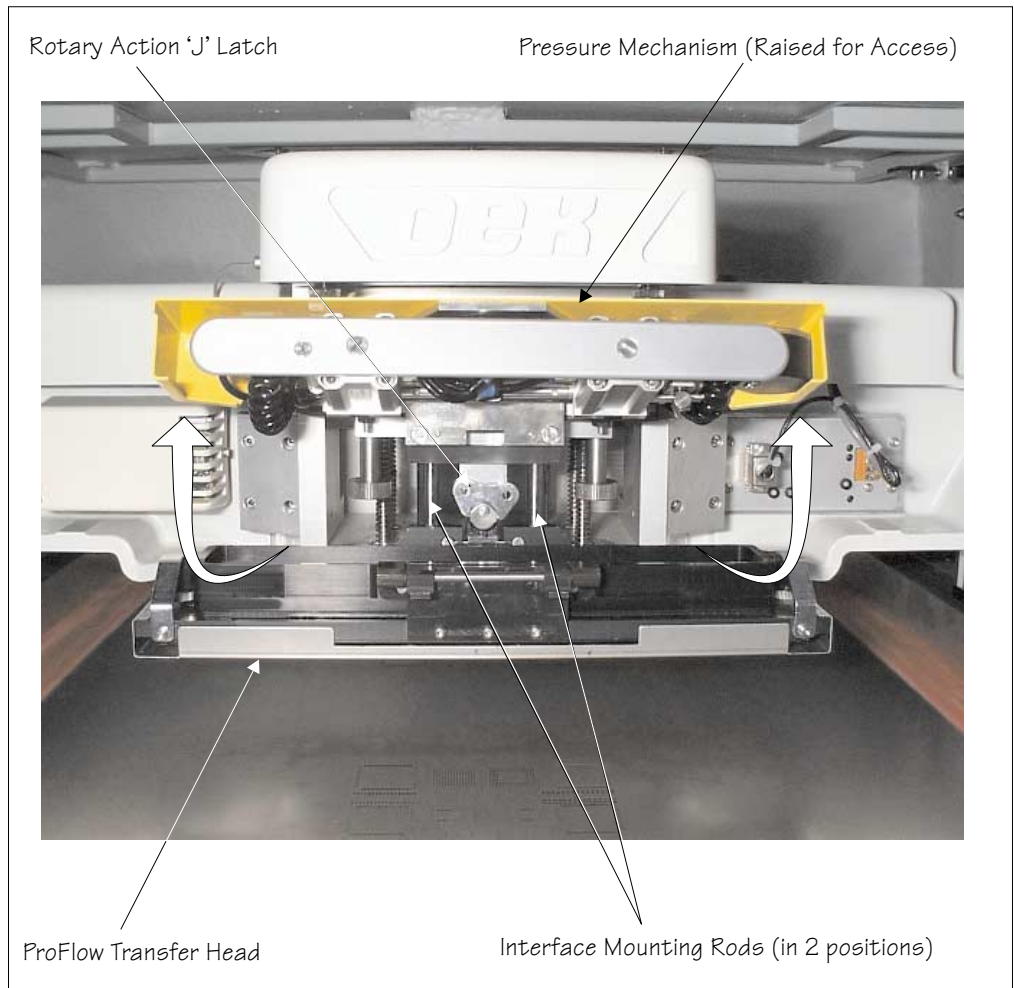
Change ProFlow			Load Cassette		Prime ProFlow		Exit
---------------------------	--	--	------------------	--	------------------	--	------

The message '**Replace ProFlow Cover Plate then Close Cover and Press Continue**' is displayed.

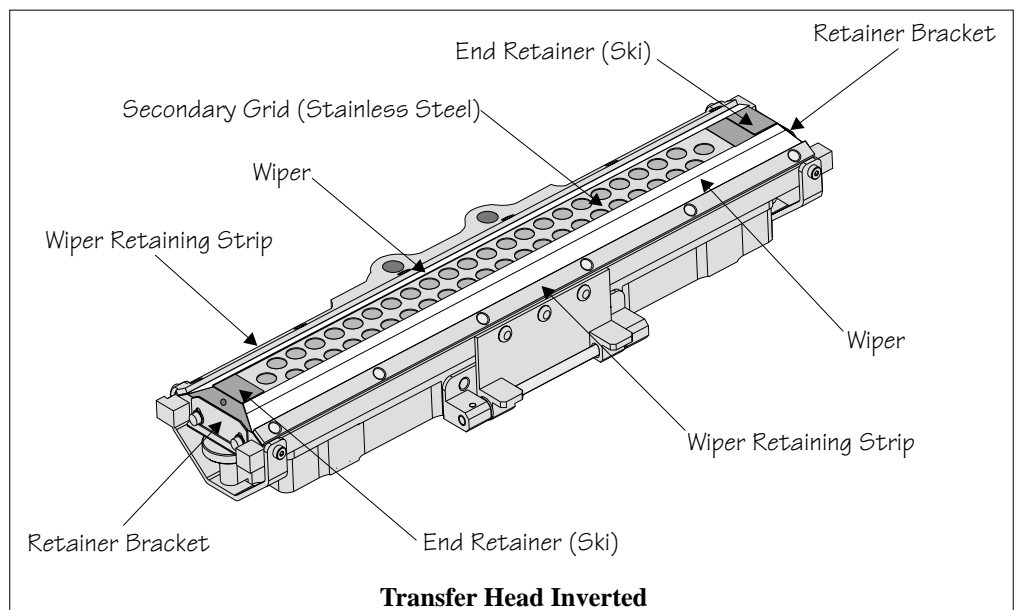
4. Open the front printhead cover.



5. Fit the paste cover to the underside of the ProFlow transfer head unit.
6. Release the latch on the front of the pressure mechanism and raise the mechanism forwards and upwards to engage the spring locking device.
7. Turn the rotary action 'J' latch anticlockwise to release the transfer head unit from the pressure mechanism. Lift the rotary 'J' latch clear of the transfer head chassis dowel to enable the transfer head to be lowered from the two interface mounting rods.



8. Invert the ProFlow transfer head and place onto the maintenance stand (provided with the equipment).
9. Remove the paste cover from the ProFlow transfer head unit.



10. Carefully remove the wipers by loosening the six screws securing the wiper retaining strips.

11. Remove both end retainers (skis).
12. Prior to fitting replacement items ensure the area around the wipers and skis is free from print medium deposits.
13. Fit replacement wipers into position ensuring both wipers are fully home against the wiper securing screws.

NOTE

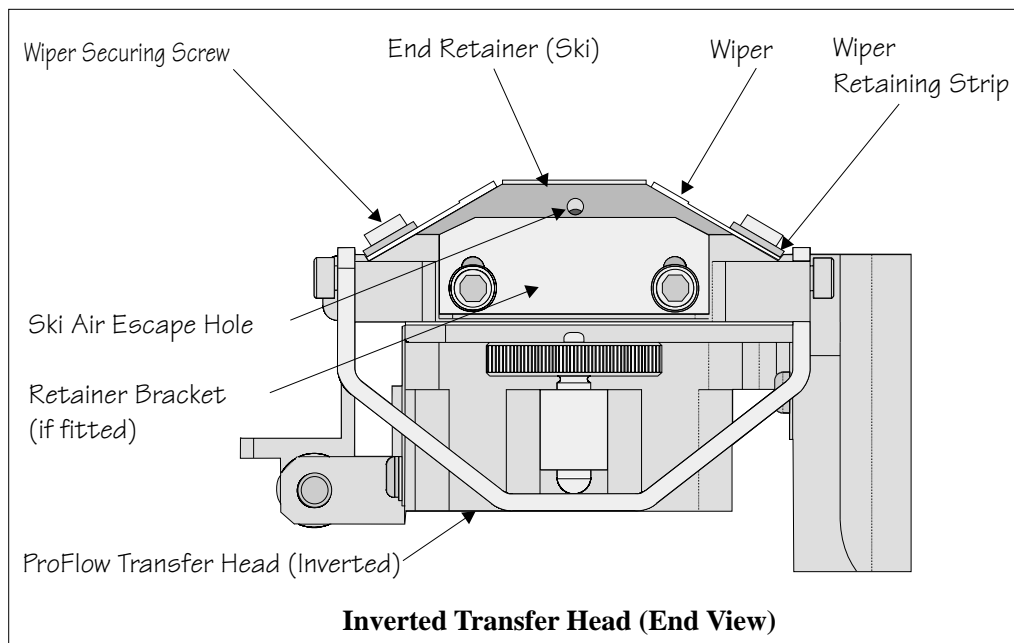
If fitting stepped etched wipers, ensure that the stepped edge of each wiper is facing outwards (wiper example in figure below refers).

14. Fully tighten the wiper retaining strip screws.
15. Loosen both end retainer brackets (if fitted).

NOTE

Retainer brackets are not fitted to the rechargeable transfer head.

16. Slide each ski between the wipers until they are flush with the ends of the wipers, (ensure the air escape hole on each ski faces outwards of the unit, see figure below).
17. Position both end retainer brackets and tighten the securing screws (if applicable).
18. Fit the paste cover.

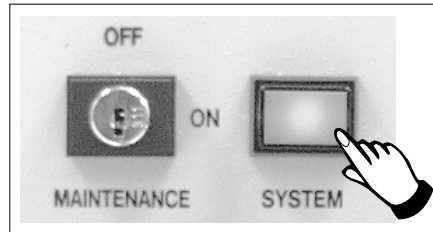


19. Slide the ProFlow transfer head unit onto the pressure mechanism mounting rods and secure in place by hooking the 'J' action rotary latch onto the transfer head chassis dowel pin and turn the latch clockwise.
20. Lower the pressure mechanism using the flush pull latch ensuring the mechanism latch is engaged and is secured into place.

21. Close the front printhead cover.



22. Press the **System** button.



23. Press **Continue** (F1).

Continue								
-----------------	--	--	--	--	--	--	--	--

24. Press **Exit** (F8).

Change ProFlow			Load Cassette		Prime ProFlow		Exit
----------------	--	--	---------------	--	---------------	--	-------------

25. Press **Exit** (F8).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling		Exit
------	-----------	-----------	---------------	---------------	----------------	--	-------------

Rechargeable Transfer Head

It is necessary at intervals to replenish the rechargeable transfer head. If there is no print medium in the transfer head at the end of a print stroke, the warning window 'Print Medium Low. Please Replenish.' is displayed.



WARNING
SOLDER PASTE AND SOLVENTS. WHEN USING OR HANDLING ANY SOLDER PASTE OR SOLVENT FORMULATION THE MANUFACTURERS' RECOMMENDED SAFETY PRECAUTIONS MUST BE STRICTLY ADHERED TO.

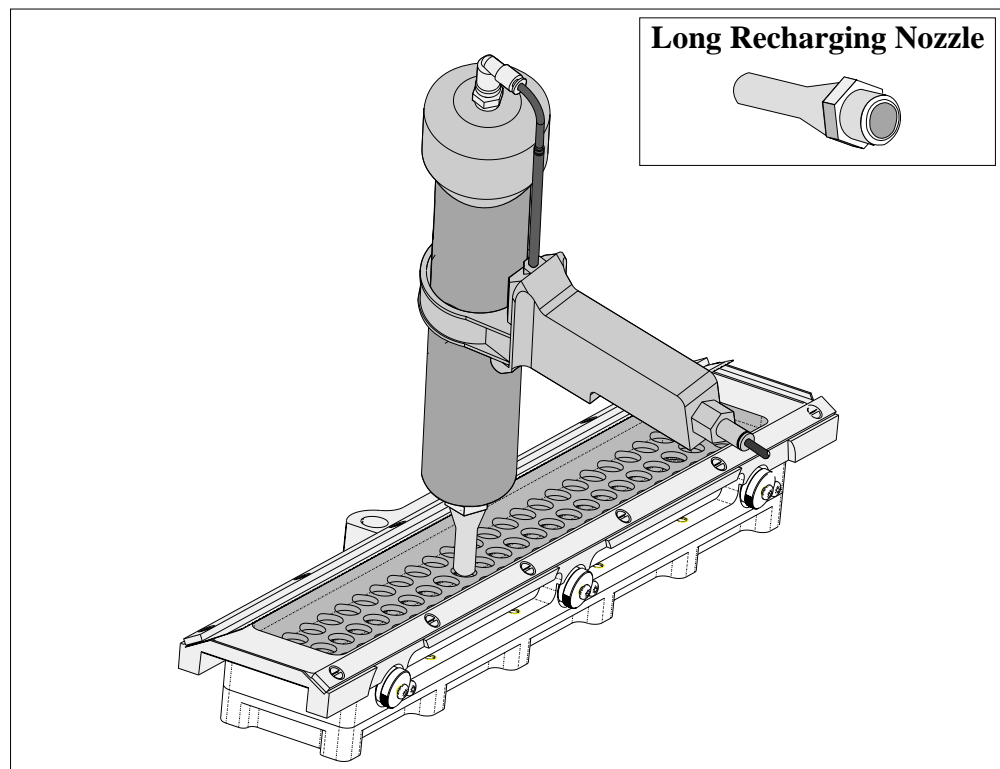


WARNING
PROTECTIVE CLOTHING. APPROVED PROTECTIVE CLOTHING SHOULD BE WORN BY SOLDER PASTE AND SOLVENT HANDLERS AT ALL TIMES TO ELIMINATE FUME INHALATION, EYE CONTACT, SKIN CONTACT AND INGESTION.

Initial Filling

If an empty/new rechargeable transfer head is to be used prior to printing. The transfer head unit is to be initially charged in accordance with the following:

1. Fit the clean/new transfer head to the maintenance stand, so that the unit is upside down.
2. Remove wipers, end retainers (skis) and the secondary ProFlow grid to gain access to the primary grid.
3. Ensure that the long nosed nozzle is fitted to the recharging gun (mastic or pneumatic gun).
4. Starting at one end of the centre row of holes in the primary grid, insert the gun nozzle through the grid into the area adjacent to the diaphragm.

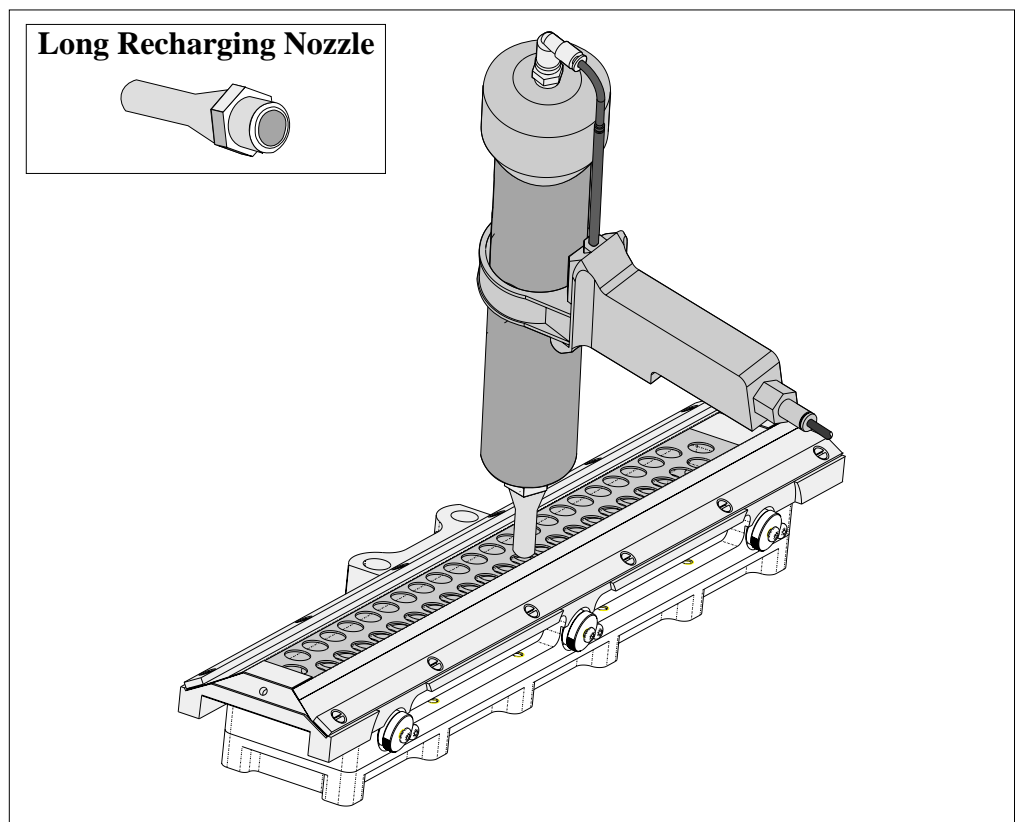


5. Fill the cavity until the paste starts to flow back up through the primary grid, extracting the nozzle slowly whilst continuing to fill. (This action fills the hole left by the nozzle.)
6. Move to the next available centre hole, in the primary grid, that has not been filled with paste. Repeat Steps 4 and 5.
7. Continue the above procedures until all the space below the primary grid is topped up with paste.

NOTE

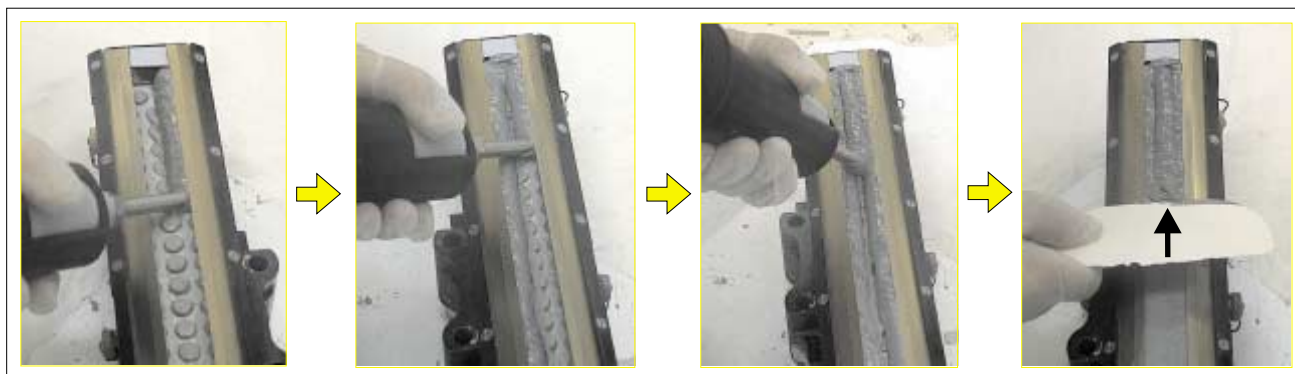
Ensure that there is little or no air bubbles trapped within the paste fill.

8. Re-fit the secondary ProFlow grid, wipers and end retainers (skis) to the unit.
9. Starting at one end of the centre row of holes in the secondary ProFlow grid, insert the gun nozzle through the grid into the conditioning chamber area.



10. Fill the cavity until the paste starts to flow back up through the ProFlow grid, extracting the nozzle slowly whilst continuing to fill. (This action fills the hole left by the nozzle.)
11. Move to the next available centre hole, in the secondary grid, that has not been filled with paste. Repeat Steps 9 and 10.

- Fill the remaining space between the secondary grid and the working edges of the wiper blades ensuring that the paste is level, (procedure below refers).



- Fit paste cover to the unit.
- Remove the transfer head from the maintenance stand and fit the unit to the ProFlow on the machine. (Refer to Technical Reference Manual, ProFlow Chapter, Setting Up Procedures for detailed information on unit removal/fitting.)

The transfer head can be replenished prior to and during a print run.

Prior to a Print Run The transfer head can be replenished prior to selecting **Run**.

- If the ProFlow unit is in the home position continue with Step 2. If the ProFlow unit is in the contact position go to Step 20.
- Select **Setup** (F6).

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
-----	------	-------------	--------------	--------	--------------	---------	--------

- Select **Setup ProFlow** (F4).

Mode	Load Data	Edit Data	Setup ProFlow	Change Screen	Change Tooling	Change Language	Exit
------	-----------	-----------	----------------------	---------------	----------------	-----------------	------

- Select **Load Cassette** (F4).

Change ProFlow			Load Cassette				Exit
----------------	--	--	----------------------	--	--	--	------

The message **‘Has the ProFlow unit’s base cover been removed?’** is displayed.

- If the ProFlow unit’s base cover is still fitted continue with Step 6. If the ProFlow unit’s base cover has been removed go to Step 12.

6. Select **Remove Cover** (F8).

Yes								Remove Cover
-----	--	--	--	--	--	--	--	-------------------------

The message '**Open the printer cover and remove the ProFlow unit's base cover**' is displayed.

7. Open the printhead cover.

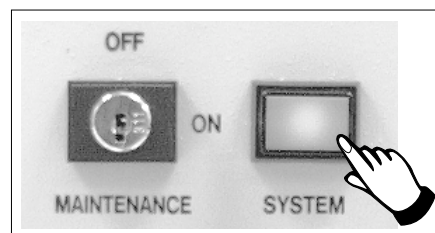


8. Remove the ProFlow unit's base cover.

9. Close the front printhead cover.



10. Press the **System** button.



11. Select **Exit** (F8).

							Exit
--	--	--	--	--	--	--	-------------

12. Select **Yes** (F1).

Yes							Remove Cover
------------	--	--	--	--	--	--	-----------------

The message ‘**The ProFlow unit will be placed in the REAR envelope**’ is displayed.

13. If the ProFlow unit is required to be placed in another envelope continue with Step 14. If the ProFlow unit is required to be placed in the machine preferred envelope go to Step 18.

NOTE
The ProFlow unit needs to be in the rear envelope to replenish the ProFlow transfer head.

14. Select **Select Another** (F8).

Proceed							Select Another
---------	--	--	--	--	--	--	---------------------------

The following window is displayed:

Preferred Envelope
REAR
FRONT

15. Use the **Next** or **Previous** keys (F4 or F5) to highlight **Front**.

Use			Next	Previous			Exit
-----	--	--	-------------	-----------------	--	--	------

16. Select **Use** (F1).

Use			Next	Previous			Exit
------------	--	--	------	----------	--	--	------

17. Select **Exit** (F8).

Use			Next	Previous			Exit
-----	--	--	------	----------	--	--	-------------

18. Select **Proceed** (F1).

Proceed							Select Another
----------------	--	--	--	--	--	--	----------------

The ProFlow unit is placed in contact with the screen.

19. Go to Step 23.

20. If the ProFlow unit is in front of the image continue with Step 21. If the ProFlow unit is at the rear of the image go to Step 23.

21. Select **Run** (F1).

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	-------------	--------------	--------	-------	---------	--------

The machine carries out a print cycle, the ProFlow unit moves to the rear of the image.

22. When the ProFlow unit is at the rear of the image, select **End Run** (F1).

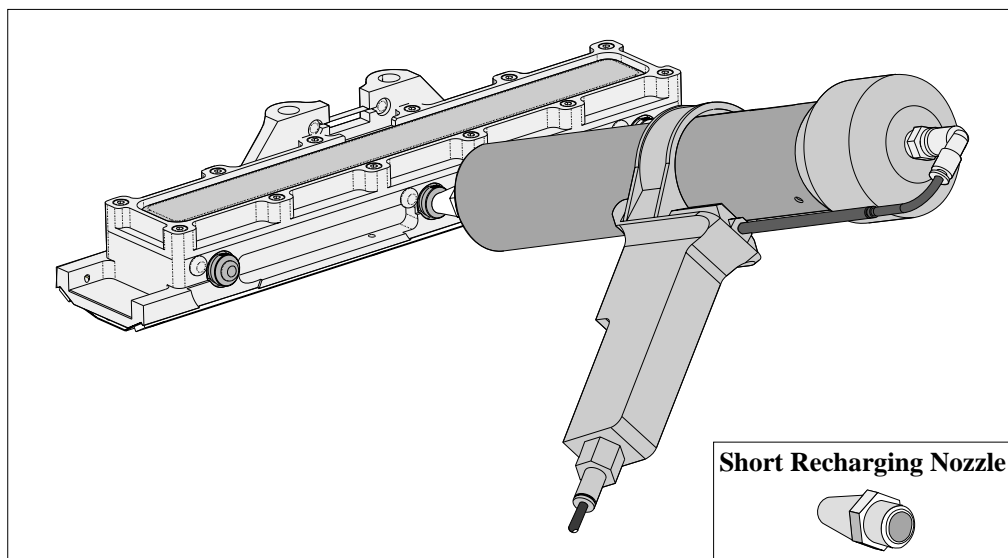
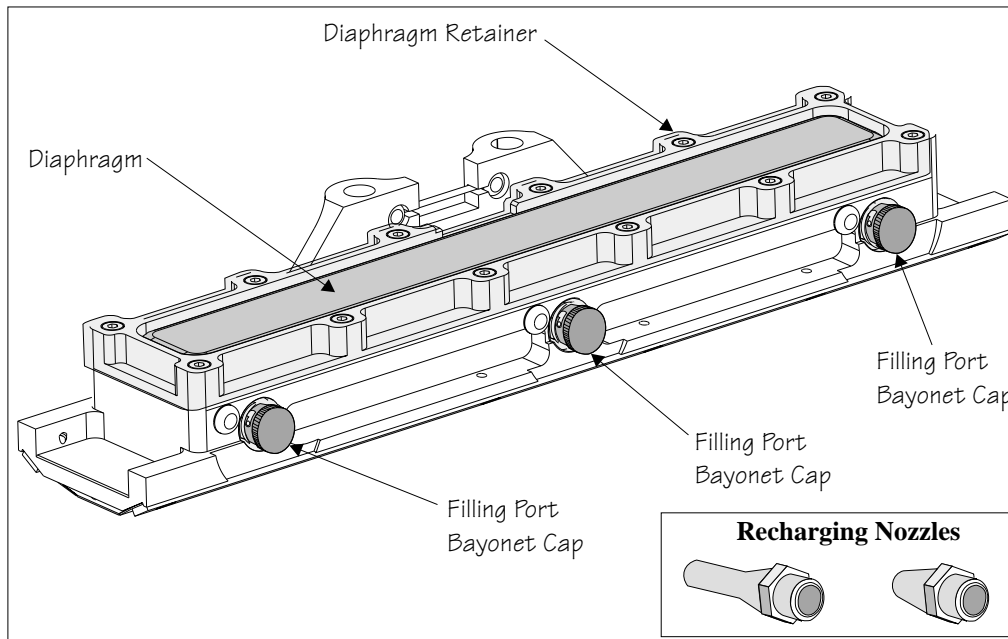
End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

23. Open the front printhead cover.



Recharging

24. Ensure that the ProFlow pressure mechanism is in the raised position (to expose transfer head diaphragm).
25. Remove the centre filling port bayonet cap.
26. Using either a general purpose mastic gun or the optional pneumatic paste gun (with a standard paste cartridge loaded). Push the nozzle of the gun into the centre filling port of the ProFlow transfer head (see figure below).



27. Fill the diaphragm until it starts to balloon, this can be spread sideways by massaging the diaphragm with the fingers.
28. Alternatively, fill using all three filling ports for even distribution.

NOTE

Ensure that only one port is opened at a time.

29. Do not overfill. If this occurs any excess will seep out between the wipers and the screen.

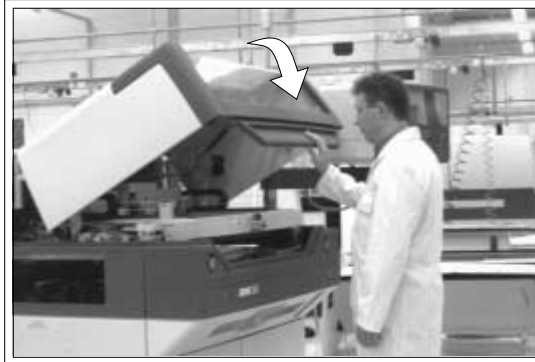
NOTE

Clean any excess seepage before commencing print operations.

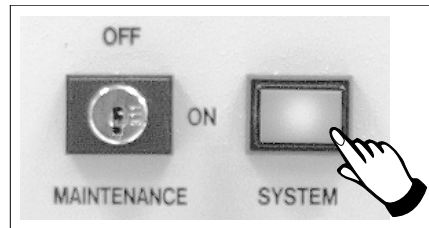
30. Ensure that the threaded areas around the filling ports are thoroughly clean before commencing print operation.

31. Refit the port bayonet caps.

32. Close the front printhead cover.



33. Press the **System** button.



During a Print Run

When the transfer head needs replenishing a warning window is automatically displayed on the monitor. The warning window varies, depending on the setting of the consumable action in set preference.

If the set preference is set to warn, continue with Step 1. If the set preference is set to pause go to Step 6. If the set preference is set to suspend go to Step 13.

1. If the set preference is set to warn, the following window is displayed:



The tricoloured beacon shows amber/green.

2. Select **Confirm** (F1).

Confirm							
----------------	--	--	--	--	--	--	--

3. Select **End Run** (F1), when the ProFlow unit is at the rear of the image..

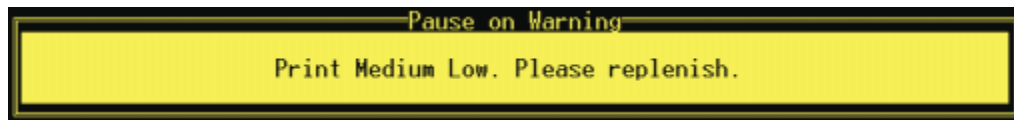
End Run	Stop Cycle	Paste Load	Clean Screen	Adjust	Knead Paste		
----------------	------------	------------	--------------	--------	-------------	--	--

4. Carry out Steps 23-33 of Prior to a Print Run procedure, earlier in this section.

5. Select **Run** (F1). The print run resumes.

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	-------------	--------------	--------	-------	---------	--------

6. If the set preference is set to pause, the following window is displayed:



The tricoloured beacon shows red.

7. If the ProFlow unit is in front of the image continue with Step 8. If the ProFlow unit is at the rear of the image go to Step 9.

8. Select **Defer** (F8).

Refill Paste							Defer
--------------	--	--	--	--	--	--	--------------

The machine carries out a print cycle, the ProFlow unit moves to the rear of the image and the pause on warning window is re-displayed.

9. Select **Refill Paste** (F1).

Refill Paste							Defer
---------------------	--	--	--	--	--	--	-------

The message **‘Open the cover and change the ProFlow cassette.’** is displayed.

10. Select **Open Cover** (F2).

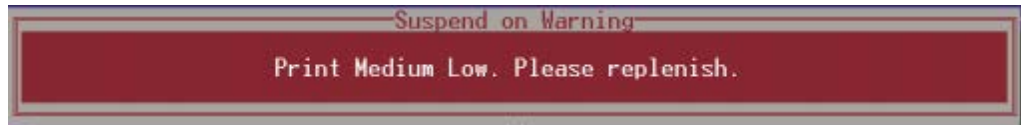
Continue	Open Cover						
----------	-------------------	--	--	--	--	--	--

11. Carry out Steps 23-33 of Prior to a Print Run procedure, earlier in this section.

12. Select **Continue** (F1). The print run resumes.

Continue	Open Cover						
-----------------	------------	--	--	--	--	--	--

13. If the set preference is set to suspend, the following window is displayed:



The tricoloured beacon shows red.

14. If the ProFlow unit is in front of the image continue with Step 15. If the ProFlow unit is at the rear of the image go to Step 17.

15. Select **End Run** (F8).

Refill Paste							End Run
--------------	--	--	--	--	--	--	----------------

16. Select **Run** (F1). The print run resumes.

Run	Head	Knead Paste	Clean Screen	Adjust	Setup	Monitor	Maint.
------------	------	-------------	--------------	--------	-------	---------	--------

The machine carries out a print cycle, the ProFlow unit moves to the rear of the image and the suspend on warning window is re-displayed.

17. Select **Refill Paste** (F1).

Refill Paste							End Run
---------------------	--	--	--	--	--	--	---------

The message **‘Open the cover and change the ProFlow cassette.’** is displayed.

18. Select **Open Cover** (F2).

Continue	Open Cover						
----------	-------------------	--	--	--	--	--	--

19. Carry out Steps 23-33 of Prior to a Print Run procedure, earlier in this section.

20. Select **Continue** (F1). The print run resumes.

Continue	Open Cover						
-----------------	---------------	--	--	--	--	--	--