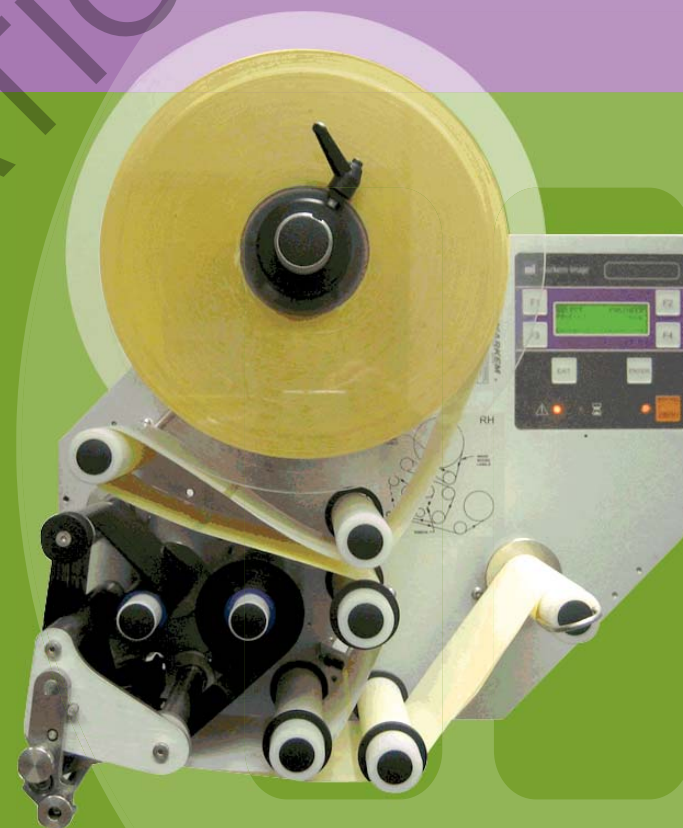


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Cimjet 300®



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SECTION 1

GENERAL INFORMATION

FOR INFORMATION

1 General Information

This manual is designed to assist with keeping your Cimjet 300 in good working order.

Topics covered in the following sections include:

- General maintenance and cleaning.
- Technical information about the Cimjet 300.
- Information about using barcode laser scanners.
- Fault finding and troubleshooting problems.
- Replacement parts and recommended spares.

Additional information regarding mechanical drawings or electrical schematics can be found on the CD in the relevant folders.

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SECTION 1 - GENERAL INFORMATION

1.1 Uptime™ Total Services

- Application Specialists
- Installation
- myMARKEM
- Repair Centre
- Training

As part of the Markem-Imaje continuous commitment to helping customers succeed, Markem-Imaje has introduced the Uptime Total Solutions Program, a comprehensive array of services to maximize uptime, productivity and customer satisfaction. These value-added services focus in the following critical areas:

Maximizing the reliability of your coding systems. The Markem-Imaje Reliability Program supports our customers with resources committed to the "science of reliability." Our Reliability Engineering team works integrally with the product development process to deliver best-in-class performance for all Markem-Imaje products. For real life simulation, the program also incorporates laboratory application testing as well as ongoing customer field reliability monitoring and testing. Markem-Imaje customers can register at myMARKEM.com and view real-time reliability data, including MTB's on our most popular machine products.

Ensuring a dependable supply chain. Markem-Imaje utilizes a fully Integrated Logistic Management System supported by strategic partnerships with other world-class companies like UPS Worldwide Logistics. Our regional repair centers offer a cost-effective solution for modular exchange or repairs of Markem-Imaje machines to keep your line running. Combining these capabilities with a strong local presence around the globe and consistent product availability and delivery performance all help keep you up and running.

Strengthening your relationship with us. Markem-Imaje representatives are the industry-leading experts in marking and coding solutions. We work with the vast majority of packaging equipment manufacturers (OEMs) to provide a seamless integration and deliver you the right solution. Comprehensive support programs include print samples on your actual packaging materials, on-line trials or extended long-term trials to reinforce the high level of quality and reliability that Markem-Imaje can bring to your application.

The program includes, but is not limited to, the following services: sample printing, training, technical support, logistics support, financing, on-line support, contracts, and project management. At the core of Uptime is our corporate reliability program, unrivaled in our industry and the reason products such as the Cimjet 300, SmartDate® and 5000 Series case coders are the undisputed industry leaders.

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SECTION 2

MAINTENANCE

FOR INFORMATION

2 Maintenance

2.1 General Maintenance and Cleaning

For the best performance of your machine, general cleaning must be carried out as a normal part of machine use.

This section describes cleaning and maintenance procedures which will help to keep the Cimjet 300 in good working condition.

2.1.1 General Information

Carry out a daily general machine inspection, which should include

- Check all guards are correctly fitted using all required fasteners.
- Check movement is smooth and that slides and cylinders are not damaged.
- Check for wear.
- Check for trapped cabling and pipes.
- Check for inaccurate label placement.

2.1.2 Positioning of Safety Labels

Labels are placed on the Cimjet 300 in various positions by Markem-Imaje to warn of potential safety hazards. As part of your regular maintenance, these must be checked and replaced whenever any are missing or damaged.

Refer to the Section 2 – Safety Guide for further instructions or advice.

SECTION 2 - MAINTENANCE

2.2 Maintaining the Compressed Air

The Compressed Air Supply to the machine may contain moisture. A water trap is provided in the main pressure regulator and this will require draining at regular intervals prior to machine use.

Carry out the following procedures:

- Check the water level in the water trap. Place a suitable container under the water trap and drain by pressing the valve pin in the base of the filter.
- Check all of the air lines for leaks, security and condition.
- Replace any defective air lines or connectors.

2.2.1 Dynamic Printhead Air Supply

The unregulated output from the main filter regulator is used to feed the ribbon save solenoid. The internal regulator is then used to set the print head pressure. this internal regulator should be set in the range 3.5 to 4 Bar.

WARNING: Do not select the Ribbon Save options in Software, if the option is not available on your machine. The operation of the Cimjet 300 will be adversely affected if this happens.

2.2.2 Blow Pipe/Vacuum Adjustment

The blow pipe and vacuum generator share a common air supply. The supply to each individual device is determined by the setting of an air restrictor inside the rear cover of the machine.

Set the restrictor to give a working vacuum, with your worst case air supply conditions.

2.3 Cleaning of all Rollers

When labels are printed the label adhesive may bleed onto the backing web. This adhesive can build up on the Print roller, Ribbon drive roller, Label nip and Idler rollers and in time cause feed problems or mark the labels prior to printing.

To prevent these problems arising, the machine must be cleaned regularly using a suitable cleaning agent such as Isopropanol. Care must be taken when cleaning to prevent damage to the machine and it's delicate components. Cleaning agents which will damage rubber or plastic **MUST NOT** be used, if in doubt consult Markem-Imaje.

It is recommended that the rollers be cleaned regularly and preferably every time the labels are replaced, or before using the machine if it has not been operated for several days.

- Switch off the machine power and remove labels/ribbon. Allow the printhead to cool if the machine has been in use.
- Use a cotton swab or soft cloth moistened in Isopropanol to remove any residue from the print roller, ribbon drive roller and the idler rollers. NEVER use abrasive materials or sharp instruments such as screwdrivers.

Refer to Section 2 – Safety Guide before using the Isopropanol.

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SECTION 2 - MAINTENANCE

2.4 The Label Unwind Brake

A sprung dancing arm and rubber friction brake band are used to control the label supply.

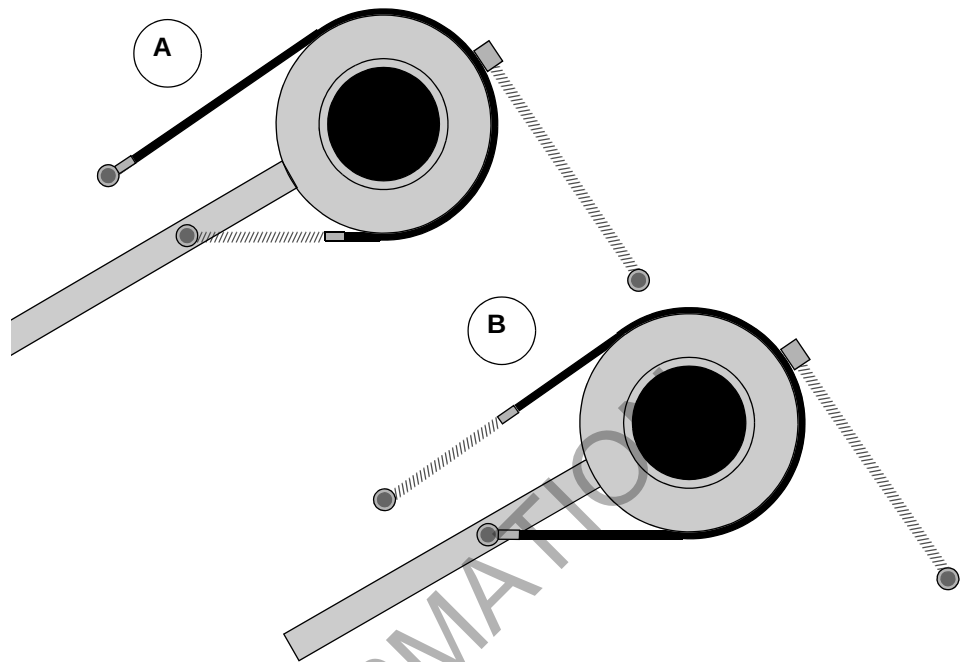


Figure 2-1: Supply Reel Brake

A) Inside wound labels.

B) Outside wound labels.

Each month check for wear of the rubber friction brake band. If the brake band or the springs are showing signs of wear, or the brake is not operating correctly, the brake band should be replaced.

If the brake is not operating correctly a heavy supply reel will tend to overrun and introduce slack into the label supply path.

To replace the brake band:

- Turn off the power to the machine and turn off, and lock off, the air supply.
- Remove the labels from the machine.
- Slacken off, but do not remove, the two grub screws in the inner locking ring. Remove the inner locking ring and the inner Perspex disk.
- Undo the screws that secure the brake band to the dancing arm and base plate and fit the new band.

2.5 Clutches

The web take-up, ribbon supply and ribbon take up rollers all use slipping clutches to allow for the differing speeds of rotation required as the diameters of the web take up and ribbon supply and rewind alter.

A particular oiled-felt material is used to provide to best performance over a long period. However, as with any slipping clutch arrangement the friction material must be periodically replaced.

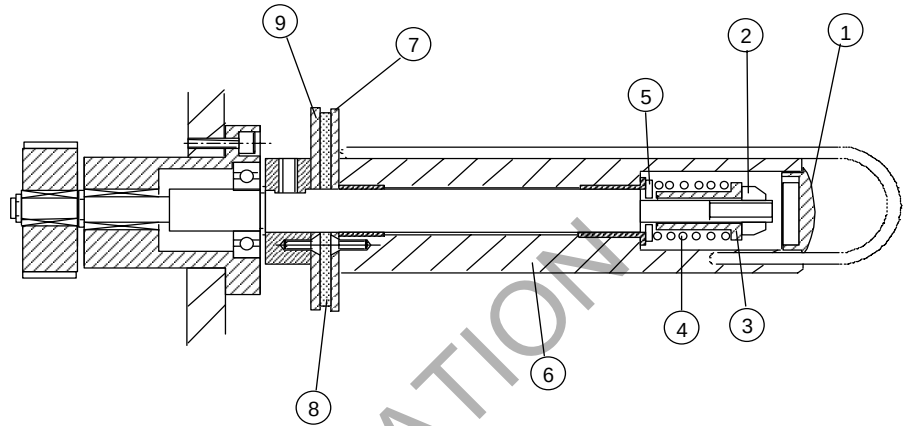


Figure 2-2: Web Rewind Roller and Clutch

The above illustration (not to scale) shows the detail of the Web Rewind Roller and Clutch. The ribbon shafts are similar, but include a special drive pulley coupling.

2.5.1 Replacing the Felt Pads

When the Clutch felt pads need replacement, (between 6 months to 1 year intervals) do the following :

- Remove the plastic end cap (1).
- Use a box spanner (10 mm A/F) to remove the nut (2).
- Remove spring (4), spacer (3) and washer (5), take care not to lose or drop these items as they are being removed.
- Remove the roller (6) and outer clutch plate (7) by sliding off the central shaft.
- Remove the felt washer.
- Replace with a new felt washer from the Spares Kit, this should be ready oiled. If the pad has dried out, soak in Kennedy OS90 oil for 10 minutes, and allow to drain for 15 minutes before fitting.
- Replace the roller, washer, spacer and nut and set the clutch torque.

SECTION 2 - MAINTENANCE

2.5.2 Removing the Rollers

These are held in place with a nut, a spacer, a spring and a washer.

To remove a roller :

- Remove the plastic end cap (1).
- Use a box spanner (10 mm A/F) to remove the nut (2).
- Remove spring (4), spacer (3) and washer (5), take care not to lose or drop these items as they are being removed.
- Remove the roller (6) and outer clutch plate (7) by sliding off the central shaft (see below).

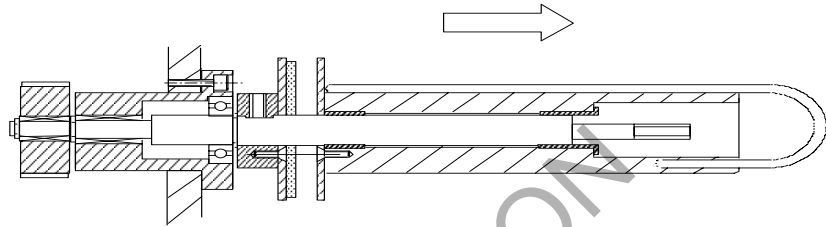


Figure 2-3: Removing a Roller

2.5.3 Setting the Clutch Torque

At machine build the clutch torques are set using a torque gauge. In service appropriate gauges are not available; the following procedure should be used to set the torque when a replacement felt is fitted.

To set the torque :

- Remove the plastic end cap (1).
- Use a box spanner (10 mm AF) on the nut (2) to adjust the torque. Turn the nut clockwise to increase torque.
- To set the torque pull the roller, along its axis and check the amount of movement.
- When the correct movement has been obtained replace the plastic end cap.

Note: For the Foil supply and rewind you should get approximately 1 mm movement. For the Web Rewind there should be virtually no movement.

2.6 Drive Belts

Cimjet 300 has two independent drive systems :

- Label Web drive
- Ribbon (Foil) drive

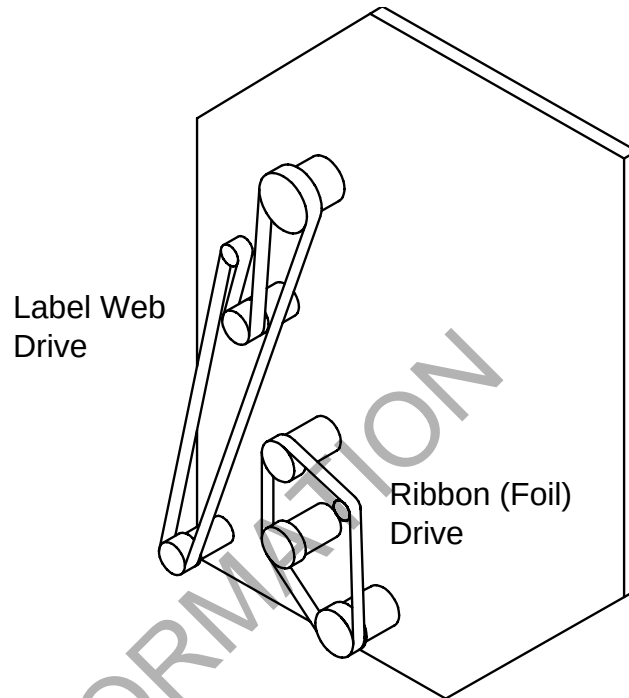


Figure 2-4: Web and Ribbon Drives

The illustration shows the position of the stepper motor and the path of the timing belt.

SECTION 2 - MAINTENANCE

To remove the Web drive belt :

- Loosen all four screws on the stepper motor.
- Remove the belt tension by rotating the eccentric cam. Loosen the eccentric's fixing screw on the FRONT of the Cimjet 300 and rotate it using the tommy bar hole provided.
- Remove the belt.

To replace the Web drive belt :

- Feed the belt into position
- Remember to tighten the motor screws before checking the belt tension with the new belt.
- Do not over tension the belt as this places undue strain on the motor bearings and will lead to premature wear. There should be approximately 15 mm of movement in the belt.

To remove the Ribbon drive belt :

- Remove all four stepper motor screws.
- Remove the motor and belt. No tensioner is used on the ribbon drive.

To replace the Ribbon drive belt :

- Fit the new belt to the pulleys on machine.
- Replace the stepper motor.

2.7 Maximising Printhead Life

Although purpose built for its application, the printhead is subject to wear and tear. Careful consideration at installation and regular preventative maintenance can significantly help to maximise printhead life.

The most frequent cause of printhead damage is abrasion; either from ingress of airborne particles or from an abrasive substrate surface. Consequently printhead life varies considerably from substrate material to material and from application to application.

The thermal ribbon protects the printhead. If you intend to use different ribbon widths with an abrasive substrate, it is possible that the unused, 'unprotected' section of the printhead may be subject to wear and ultimately, damage.

For all thermal transfer printers, you should:

- Regularly clean the printhead. The frequency of cleaning is entirely application and environment specific. Markem-Imaje recommend that the printhead is cleaned every time the labels are replaced, or before machine use, if it has not been operated for several days.
- To minimise printhead wear generally, always use the minimum darkness parameter that delivers an acceptable print quality.

2.7.1 Cleaning the Printhead

- Switch off the machine power.
- Remove the labels and ribbon. Allow the printhead to cool if the machine has been in use.
- Use a cotton swab or soft cloth moistened in Isopropanol to remove any residue from the printhead.

CAUTION:

Use great care when cleaning the print head. **NEVER** use abrasive materials or sharp instruments such as screwdrivers.

2.7.2 Changing the Printhead

To remove the printhead module :

- Switch off and isolate the machine power and air supplies.
- Remove the labels and ribbon from the machine.
- Release the four socket head screws securing the printhead.
- Carefully disconnect the printhead electrical connector.
- Remove the printhead from the machine.
- Place the printhead into the machine. Connect the printhead electrical connector.
- Secure the printhead to the machine with the four socket head screws.
- Check the printhead voltage setting required for the new printhead being fitted on the Data Sheet supplied with the replacement unit.
- Adjust the SW1 voltage regulator on the control board to the correct setting.
- Re-load the labels and ribbon.
- Connect and switch on the power and air supplies.
- Select the Test pattern in Engineer Mode.
- Verify that the machine prints correctly.

CAUTION:

Prior to fitting a replacement printhead, clean all components on the immediate area and check the printhead resistance marked on the printhead.

2.7.3 Printhead Adjustment

The position of the printhead is fixed across the print line. This allows dot zero of the printhead to be matched to the edge of the paper being used.

The head pressure is determined by the pre-tensioning of the head lift springs. This operation is performed in the factory using gauges and should not require any adjustment in the field.

The printhead pressure point is set by the position of the print head plunger. This should be in the centre of the label.

2.8 Sensor Adjustment

2.8.1 Low Reel Sensor

An optical sensor is used to detect when the supply reel diminishes below a set level. The sensitivity of the sensor is adjusted by a screw on the sensor.

2.8.2 Nip Home Sensor

The position of the nip arm is monitored to ensure that the print head and nip arm are correctly in position before printing starts.

A small, barrel type, inductive sensor is used to sense the position of the rear of the pivoted nip arm.

To remove this sensor :

- Turn off the power to the machine and turn off, and lock off, the air supply to the machine.
- Remove the rear cover.

The sensor is located adjacent to the print roller drive pulley.

- Remove the lock nut and unscrew the sensor.
- Close the nip roller.
- Screw in the new sensor.

Note: There should be a 0.1mm gap between the sensor and the end of nip arm.

- Secure the lock nut.
- Reconnect the sensor wiring.
- Replace the machine covers.
- Turn on the machine and use the I/O screen to check that the sensor is operating correctly.

SECTION 2 - MAINTENANCE

2.9 Label Gap Optic

A Optical slot sensor is used to determine if the labels are stopping in the correct position. Infra-red light is passed from a transmitter to a receiver on the ends of the sensor. The labels are run through this sensor and the amount of light passing through the labels or label gap is recorded as a voltage change and stored as a digital figure which is used by the processor.

Cimjet 300 uses Stepper motors and depending on the resolution of the printhead being used, will step these at either 8 steps/mm or 12 steps/mm.

The backing web in the gap between labels will allow more light to pass through than the backing web and labels together. These voltage levels are used to determine if a label, backing web and no labels, are present in the sensor.

An example of how this process works is described below :

Label size = 100 mm

Label gap = 3 mm

Printhead resolution = 8 dots/mm

Stepper motor = 8 steps/mm

When the Cimjet 300 feeds datum labels the processor will record a constant voltage level for 800 (100 mm x 8) steps of the stepper motor and then record a rise in the voltage level for 24 steps (3 mm x 8)

This is used to inform the processor when to start and stop printing.

If these level start to vary the machine will initiate a label feed fault.

2.9.1 Label Stopping Position

If the label gap happens to stop in the gap sensor this will cause label feed problems. A second hole position for the gap sensor is provided in the base plate for this condition.

Two possible optic positions are provided. The standard position is the farthest position away from the beak.

If the Gap optic has to be moved the OPTIC ADJUST parameter should be set accordingly to minus 100 (-10 mm)

After adjustment reset the Gap Optic.

To set the Gap Optic :

- Press **ENGINEER MODE**
- Press **SET LABEL OPTIC**

The machine will now automatically determine the optimum sensor signal for the label/web and web.

2.10 Changing the Label Size

When the label width size is altered, check the following :

- Reposition all the **Outer** label guide collars to suit the new label size. The **Inner** collar position should not be moved.
- Check the printhead pressure points.
- Ensure that the web nip roller is in the centre of the web.

When the label Height size is altered, check the following :

- After webbing up the machine use the Engineer Mode to “set the label optic sensor”.
- Check that the new label size gap **does not stop** in the Gap Sensor.
- If the gap between labels does stop in the sensor, the Gap Optic sensor should be moved to the second hole position and the Optic Adjust parameter changed by minus 100 (-10 mm) accordingly.
- Set the new Test pattern size to suit the label in the Restricted Access Mode/ Label menu parameters.
- Re-set any “Move Print” settings back to zero.
- Print a Test pattern from the Engineer Mode menu.
- Check if the image is in the correct position on the label.
- Adjust the Printer Feed Adjust parameters if necessary.

Note: Beware of attempting to print in the gap between labels. In extreme cases this can result in heat build up in the print head and premature failure of the head.

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SECTION 3

TECHNICAL GUIDE

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3 Technical Guide

3.1 Pneumatics

3.1.1 Air Requirements

A compressed air supply is required by the Cimjet 300 to drive the applicator module. This must be air at 6 bar and should be: Dry, uncontaminated air and should not be lubricated.

A filter regulator assembly is fitted to the base of the stand, this comprises of a manual isolation valve, a water trap, pressure regulator and dump valve. The air supply is via a 6mm or 1/4 BSP flexible pipe.

3.1.2 Filter / Regulator

A filter regulator is provided as standard and includes :

- 1) Isolation switch
- 2) Unregulated air inlet
- 3) Pressure regulator
- 4) Pressure indication dial (0-10 bar)
- 5) Regulated air outlet
- 6) Filter (Micro Mesh)
- 7) Water Trap

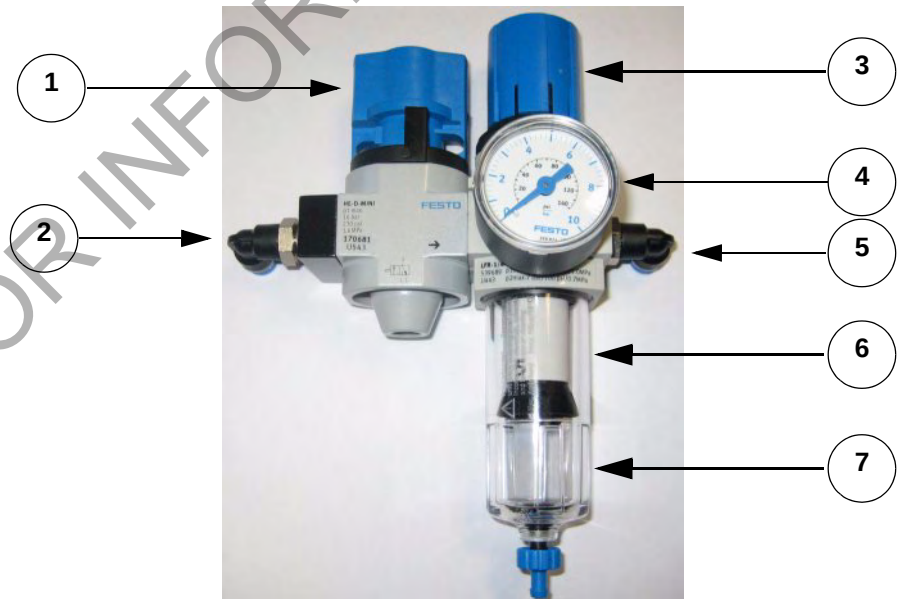


Figure 3-1: Air Filter/Regulator Unit

SECTION 3 - TECHNICAL GUIDE

3.2 Power Configuration

Before installing the Cimjet 300 ensure that the power supply is correctly configured.

The Cimjet 300 is normally configured with the necessary power connections and fuse fitted to suit customer requirements. If the requirements change, the Cimjet 300 can be quickly reconfigured by modifying the power connections.

The power supply is configured by :

- Power connections to the Toroidal transformer located at the rear of the machine.

3.2.1 Power Connector

A IEC 320 type connector is used for power. Single phase Live, Neutral and Earth connections are required.

- Pin 1 – Live
- Pin 2 – Neutral
- Ground pin – Earth

Ensure that the securing screw for the outer cover is always fitted.

The power requirements are 115 / 230 V AC, Single phase rated at 375 VA continuous, 750 VA maximum at switch on.

FOR INFORMATION

3.2.2 Power Connections

The power connections are made at the terminal, located at the rear of the machine. The connection arrangement depends on the supply voltage. The machine can be configured for 115V or 230V by adding or removing the wire link provided. Connect the Live (Brown) wire, Neutral (Blue) wire and appropriate link as shown.

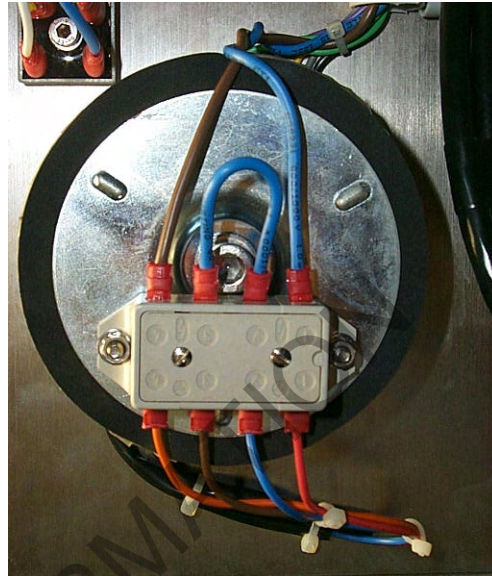


Figure 3-2: Power Terminal

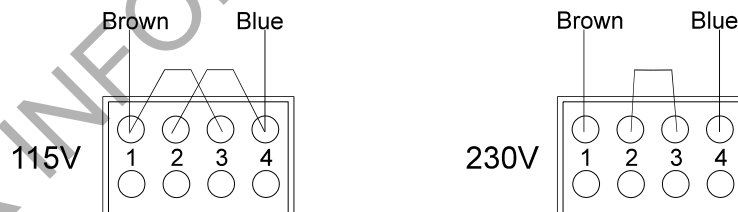


Figure 3-3: Power Connection Arrangement

SECTION 3 - TECHNICAL GUIDE

3.3 External Connectors

Communications and Input / Output connectors are provided on the rear of the Cimjet 300.

These are the basic functional connectors, two further connectors (External I/O and Laser Scanner) can be accessed by removing the rear cover.

CAUTION: Before removing the rear cover, ensure that the mains power and air supply are disconnected.

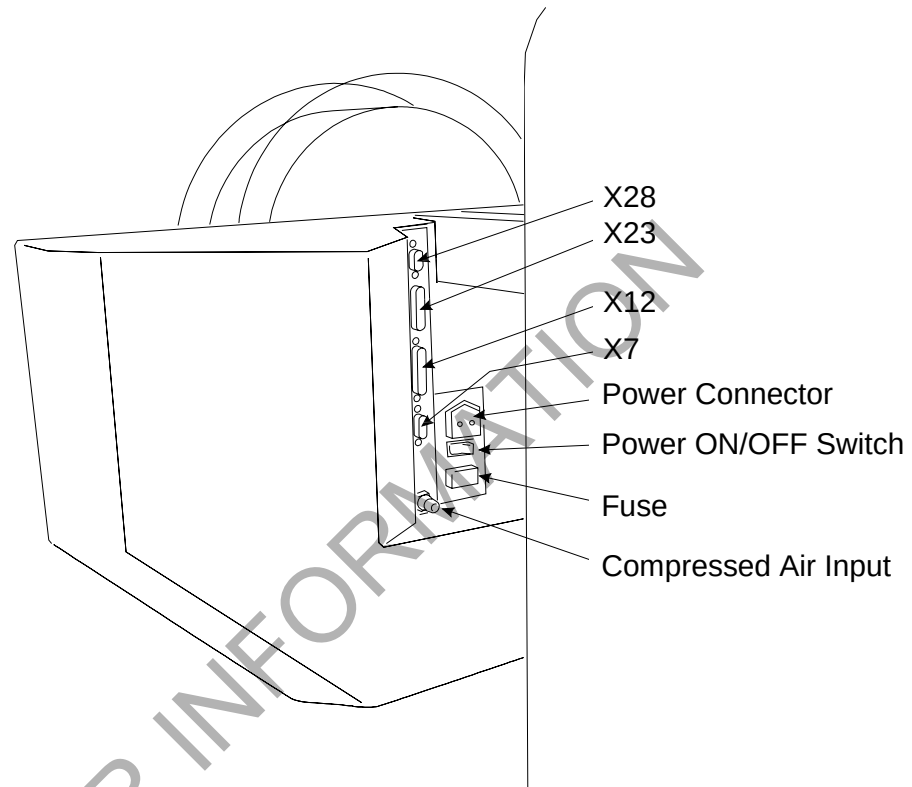


Figure 3-4: External Connectors

Note: It is essential that the connector dust covers provided with the machine are fitted to all unused connectors to protect against dust and prevent static damage to internal components.

The main components are shown below:

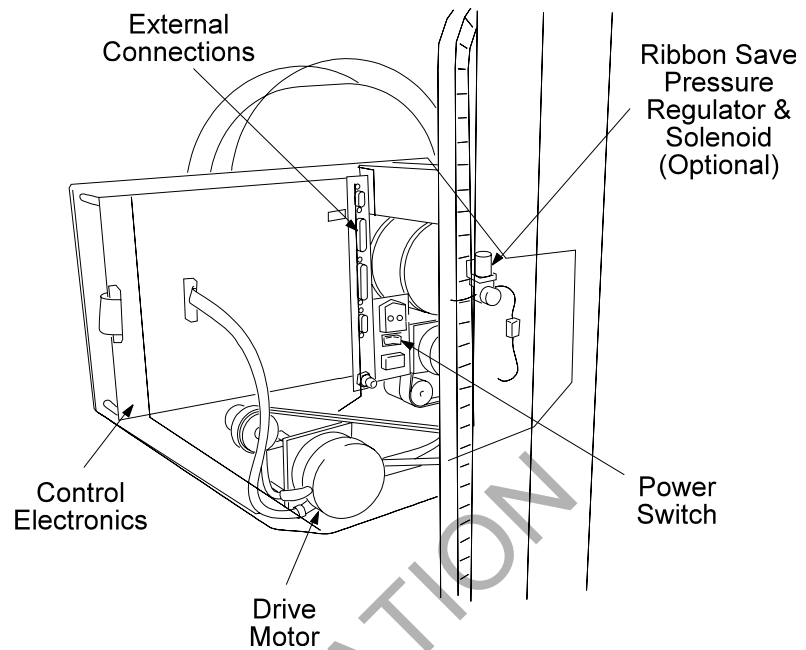


Figure 3-5: Cimjet 300 Rear View with Cover Removed

Note: This view does not show the wiring looms or air pipes.

The function of the connectors is as follows :



X28 on PCB (X102 on rear cover) - Communications.

X23 on PCB (X101 on rear cover) - External Sensors.

X12 - External I/O connections.

X7 - Bar code verification Laser Scanner connections.

Note: The **X7** connector is only functional with a Serial/Laser card fitted to the main PCB.

SECTION 3 - TECHNICAL GUIDE

3.3.1 X28 Communications

9-pin miniature D-type connector.

X28 port supports RS-232, RS-422 and RS-485 comms.

It provides communication to CoLOS Control, Host PC, Mainframe or PLC and is also used for Emulation Mode.

PC to Cimjet 300 - RS232 Cables shows suitable RS-232 cables for connecting your PC to the Cimjet 300.

For RS-485 wiring details, please refer to Section 13 – Electrical Schematics.

Table 3– 1: Comms Port Connections

Pin Number	Description
1	TXD0/485+
2	RXD0/232
3	TXD0/232
4	RXD0/485-
5	0 V (Isolated)
6	5 V (Isolated)
7	RXD0/485+
8	0 V
9	TXD0/485-

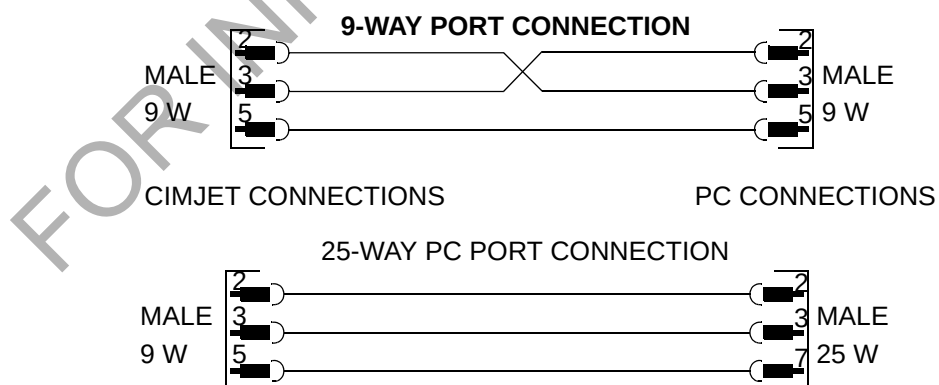


Figure 3–6: PC to Cimjet 300 - RS232 Cable

3.3.2 X23 External Sensor Connection

9-pin miniature D-type connector.

X23 Sensor port provides connection to external sensors, such as the Print and Apply sensors.

Table 3– 2: External Sensor Connections

Pin Number	Description
1	+24 V
2	Print Sensor Input
3	0 V
4	+24 V
5	Laser Gate Input (LAS-G-IN) Optional Serial/Laser board required
6	0 V
7	Product Gone Sensor (Spare Input SP-EXT-IN1)
8	Apply Sensor (Spare Input SP-EXT-IN2)
9	0 V

The Inputs are designed to operate with PNP sensors or Volt-free contacts. If external voltage is used, it must not exceed 30 V DC.

Where Volt-free contact is used, the contact should be wired between the Input pin and one of the 24 V supplies on the connector.

For example: Print signal Pins 1 and 2.

3.3.3 X12 External I/O

25-pin miniature D-type connector.

X12 connector is used for additional machine control and monitoring signals. For example fault and warning signals, which can be used for controlling beacons or for linking to the conveyor control system.

Machine outputs can be configured to operate as Volt-free contacts or as 24 V DC outputs. The mode of operation for each output may be configured individually. A link on the mother board is used to select the operating mode, see 8.8.3 Control PCB Links.

- The Volt-free outputs can source up to 1 Amp at a maximum of 30 V DC.
- In 24 V Mode the Cimjet can supply up to 1 Amp total across all the outputs using the 24 V supply.

A number of additional connections are provided:

Motor Safety

When LK9, on the mother board, is removed the motor safety connections on X12 must be connected. The relay or output used must be capable of dealing with 35 V DC at 3 amps.

Dump Valve Interlock

When LK3 on the processor board is removed, this allows the two Dump Valve interlock connections on X12 to be used to control the Dump valve output. Dump valves are only used on applicators requiring a hard-wired dump valve to make the machine safe.

The external contact must be capable of handling 0.25 Amps at 24 V DC.

Safety Module Connections

The 24 V, 0 V, E-Stop and Guard connections allow an optional safety module to be provided for applicators where the level of risk requires a hard-wired safety circuit. The N/O or N/C state indicates the state of the circuit when the Cimjet 300 is powered up and operating in a fault/warning free condition.

Note: N/O = Normally Open, C = Common, N/C = Normally Closed

Table 3– 3: Safety Module Connections

Pin Number	Description	
	Volt-free Mode	+24V Mode
1	Ready (RDY) (N/O)	Ready (+24V) (LK4)
2	Ready (C)	0 V
3	Fault (N/O)	Fault (+24V) (LK5)
4	Fault (C)	0 V
5	Fault (N/C)	Fault (+24V)
6	Warning (N/O)	Warning (+24V) (LK6)
7	Warning (C)	0 V
8	Warning (N/C)	Warning (+24V)
9	Reject (N/O)	Reject (+24V) (LK7)
10	Reject (C)	0 V
11	Busy (N/O)	SPOUT (+24V) (LK8)
12	Busy (C)	0 V
13*	+5V	
14*	0 V	
15	Motor Safety + (+42V) (LK9)	
16	Motor Safety - (42V - SW)	
17	Dump Valve Interlink (24V) (LK3)	
18	Dump Valve Interlink (24V - SW)	
19	+24V	
20	E Stop (Monitor I/P Only)	
21	Guards (Monitor I/P Only)	
22	0 VP	
23*	TXD2 (RS-232 Optional)	
24*	RXD2 (RS-232 Optional)	
25*	GND (RS-232 GND)	

* Pins valid when optional Serial/Laser board installed.

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3.4 X7 Bar code Verification Scanner

15-pin miniature D-type connector.

This connector is accessed by removing the rear cover.

The X7 connector is used when a Serial/Laser card has been fitted to the Cimjet 300.

This connection provides serial communication and I/O functionality for interfacing with a Bar code verification scanners.

The default wiring is configured for an Erwin Sick CLV 210 verification scanner.

For further information regarding connection wiring, please consult the appropriate manufacturer's documentation and Section 13 – Electrical Schematics.

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3.5 Special I/O Functions

Cimjet 300 supports some specialized Input / Output functions the details of these follow:

3.5.1 Product Select Input

This function can be used when two different product codes are being used at the same time on the same conveyor.

The Product Select Input option must be first enabled in the Machine Configure Parameters.

The Input can be switched to select product **A** or product **B**.

For example: If the input is High, the label for product A will be used, or if the Input is switched to Low the label for product B will be selected and used.

This Input would normally be switched by an external device such as a PLC responsible for control of the products.

Note: Only available if the optional Serial/Laser board is fitted.

Connections on **X42** – 3-pin Molex connector on the Serial/Laser board.

- Pin 1 – 24V DC
- Pin 2 – Signal
- Pin 3 – 0 V

Signal can either be Volt-free using pins **1** and **2** or a 24V signal form an external source such as a PLC using pins **2** and **3**.

3.5.2 Status Output

The Status Output can be configured to inform an External control system of various conditions.

For example, when the Cimjet 300 has completed imaging the last label or when the Cimjet 300 has completed a Print or Apply cycle.

The Status Output can then be reset by one of the user options in the Restricted access menu, Machine configure parameters.

24V Output (N/O) or (N/C) contacts switched by the Cimjet 300.

- Connections on **X44** (N/O) or **X45** (N/C) – 2-pin Molex connectors on the Serial/Laser board.
- Pin 1 – +24V
- Pin 2 – 0 V

For further information on status signals please refer to the CimComms Protocol Documentation, which is obtainable from Markem-Imaje or can be down-loaded from MARKEM.com

http://www.markem.com/am/us/eng/downloads/software_central.asp

3.5.3 Status Reset Input

In some cases it is necessary to have secure interlocking of the Cimjet 300 with External control systems. The **Status Output** is used to do this.

For example, it may be necessary for the External control system to know when the Cimjet 300 has finished Imaging the last Label in order for it to accept the next product select signal. The Status Output can be configured to do this. This output can be reset by several different means one of which is by the Status Reset Input.

This input is normally switched by the External control system.

Note: Only available if the optional Serial/Laser board is fitted.

Connections on **X43** – 3-pin Molex connector on the Serial/Laser board.

- Pin 1 – 24V DC
- Pin 2 – Signal
- Pin 3 – 0 V

Signal can either be Volt-free using pins **1** and **2** or a 24V signal form an external source such as a PLC using pins **2** and **3**.

This option can be activated from the Restricted Access \ Machine configure parameters

For further information on status signals please refer to the CimComms Protocol Documentation, which is obtainable from Markem-Imaje or can be down-loaded from MARKEM.com.

http://www.markem.com/am/us/eng/downloads/software_central.asp

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3.6.1 On Board Connectors

Table 3– 4: On Board Connectors

Connector	Function
TB1	Main power connector – 12-way
TB2	Printhead voltage connector – 2-way For boost/motoring purposes
X1	Expansion I/O connector
X2	
X3	Head Lift solenoid
X4	Totalising counter 1 – 24VSOL 2 – Output
X5	Gap Optic Drive 1 – Drive 2 – 0 VA 3 – +5VA 4 – Sense
X6	Ribbon Optic Drive as X5
X7	External Laser connector – 15-way HDD socket
X8	Beacon Outputs 1 – Ready (N/O) 2 – Warning (N/O) 3 – Fault (N/C) 4 – 0 VP
X9	Output #5 (N/C) – 2-way Molex connector 1 – Signal 2 – 0 VP
X10	
X11	Output #5 (N/O) – 2-way Molex connector 1 – Signal 2 – 0 VP
X12	External I/O connector – 25-way D-type Socket
X13	Output #8 (N/O) – 2-way Molex connector 1 – Signal 2 – 0 VP
X14	Output #8 (N/C) – 2-way Molex connector 1 – Signal 2 – 0 VP
X15	Printhead connector – 34-way

Table 3– 4: On Board Connectors

Connector	Function
X16	Operator Interface
X17	Output #9 (N/C) – 2-way Molex connector 1 – Signal 2 – 0 VP
X18	Output #7 (N/O) – 2-way Molex connector 1 – Signal 2 – 0 VP
X19	Output #9 (N/O) – 2-way Molex connector 1 – Signal 2 – 0 VP
X20	Output #6 (N/O) – 2-way Molex connector 1 – Signal 2 – 0 VP
X21	Auxiliary Printhead – 10-way Molex connector
X22	Head/Nip Open – 3-way Molex connector 1 – 24VS 2 – Signal 3 – 0 VS
X23	External Sensor – 9-way D-type connector
X24	Applicator Input #3 – 2-way Molex 1 – 24VSNS 2 – Signal
X25	Low Paper – 3-way Molex connector 1 – 24VS 2 – Signal 3 – 0 VS
X26	Applicator Input #2 – 3-way Molex 1 – 24VS 2 – Signal 3 – 0 VS

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Table 3– 4: On Board Connectors

Connector	Function
X27	Applicator Input #1 – 3-way Molex 1 – 24VS 2 – Signal 3 – 0 VS
X28	External Host Comms connector – 9-way D-type connector
X29	Web Motor Drive – 4-way Molex
X30	Ribbon Motor Drive – 4-way Molex
X31	Internal Microprocessor pins 1 - 36
X32	Internal Microprocessor pins 37 - 72
X33	Internal Microprocessor pins 73 - 108
X34	Internal Microprocessor pins 109 - 144
X35	Internal JTAG Port
X36	Auxiliary 24V Output – 2-way 1 – 24VP 2 – 0 VS
X37	
X38	SPI Interface connector – 20-way
X39	
X40	Ethernet Option connector – 12-way

3.6.2 Input and Output LED's

Table 3– 5: Input LED's

Input LED	Function
Main Processor Board	
LD1	Print and Apply Input
LD2	Spare External Input # 1
LD3	E Stop Monitor
LD4	Guards Monitor
LD5	Applicator Input # 3 Spare External Input # 2
LD6	Low Paper
LD7	Cylinder Home Input
LD8	Applicator Input # 2
LD9	Head/Nip Open

Table 3– 6: Output LED's

Output LED	Function
Main Processor Board	
LD10	Fault
LD11	Warning
LD12	Reject
LD13	Busy
LD14	Cylinder Out
LD15	Pad Blow
LD16	Vacuum / Blow Pipe
LD17	Applicator Specific
LD18	Applicator Specific

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3.6.3 Processor Board Links

Table 3– 7: Processor Board Links

Link Number	Function
LK1	Battery Link
LK2	
LK3	Dump Valve Link (Default Link in) Remove this link to enable remote Dump valve control via X12 connector
For links LK4 to LK8 configure respective outputs for: Link positions – 1-2,3-4 +24V Link positions – 2-3,4-5 Volt-free operation (Default)	
LK4	Ready Output – 5-way link
LK5	Fault Output – 5-way link
LK6	Warning Output – 5-way link
LK7	Reject Output – 5-way link
LK8	Spare Output #1 – 5-way link
LK9	Motor Safety Interlock (Default Link in) Remove link to enable remote enable/disable of the Motor voltage via X12 connector.
LK10	Used in combination with SW2 to set the printhead voltage.
LK11 – LK14	
LK 15	Boot ROM configuration (Default A) A = On Board ROM (U2 & U3) B = Socketed ROM (U5 & U8)
LK16	Expansion ROM configuration for U5/U8 (Default A) A = Flash B = EPROM
LK17	Bootstrap link (Program upgrade via RS - 232) A = Default B = Bootstrap enabled

3.6.4 Test Points

WARNING: Only qualified personnel are allowed to use the Test Points to check the board operation. All precautions must be taken to prevent possible Injury, and/or Damage to the product

Table 3– 8: Test Points

Test Point	Function
TP1	0 VP
TP2	0 V (Logic supply)
TP3	Head Lift Solenoid – PWM Switched Output
TP4	Head Lift Solenoid – On/Off Switched Output
TP5	Counter Out – Output for optional hardware
TP6	Ribbon Sensor – Analogue Sensor Output
TP7	Label Gap – Analogue Sensor Output
TP8	Label Gap – 0 V
TP9	PHD-VN-EN – Printhead Voltage Enable signal
TP10	0 VP
TP11	24V – Regulated 24V Supply
TP12	PHD-LTCH# – Printhead data latched (Active Low)
TP13	Printhead Strobe (Active Low)
TP14	35VU – Unregulated Supply used to generate both 24V and 5V Supplies
TP15	+5V Logic Supply
TP16	Paper Steps – Stepper Clock Signal – Label Web
TP17	Direction Paper – Stepper Direction Signal – Label Web
TP18	Paper Stepper Ref. – Stepper Current Demand – Label Web
TP19	Ribbon Step – Stepper Clock Signal – Ribbon Drive
TP20	Direction Ribbon – Stepper Direction Signal – Ribbon Drive
TP21	Ribbon Stepper Ref. – Stepper Current Demand – Ribbon Drive
TP22	0 V – (Logic Supply)
TP23	232/485 – Output for RS232/485 Selection for Comms Port (Active High for RS232)
TP24	TX Data (TXD0) – Comms Port RS232 Output Data
TP25	RX Data (RXD0) – Comms Port RS232 Input Data

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Table 3– 8: Test Points

Test Point	Function
TP26	+VM – Motor Voltage (Nominally +42V Unregulated)
TP27	0 VM – Motor Voltage Ground
TP28	0 VI – Isolated 5V Supply Ground
TP29	5VI – Isolated and Regulated 5V Supply
TP30	PHD-DATA 2 – Printhead Data
TP31	CONT-OUT – Printhead Control Data
TP32	PHD-DATA 1 – Printhead Data
TP33	PHD-CLK – Printhead Clock Signal
TP34	BEO – Printhead Data Enable Signal
TP35	SYSCLK – 20MHz Clock to PLD Device
TP36	Development use only
TP37	Development use only
TP38	Development use only
TP39	Development use only
TP40	Ethernet enable (Active Low)

3.6.5 Fuses

Table 3– 9: Fuses

Fuse	Function
F1	Printhead Supply – 10A (5x20mm T10AH250V)
FR1	24V Laser Supply – 0.75A
FR2	24V I/O and Beacon Supplies – 1.35A
FR3	24V Solenoid Supply – 0.75A
FR4	24V SPI Supply – 0.75A
FR5	24V Sensors Supply – 0.75A
FR6	Motor/Head Lift Supply – 4A
FR7	5V Isolated Supply – 0.17A
FR8	5V and 24V Supplies – 5.0A

3.6.6 Firmware and RAM

Cimjet 300 Rev D board supports three different options for Machine control Software. The software is stored in two ROMs These will either be Flash ROM or EPROM and will be labelled with a "P" number indicating the Software version. The devices will also have a label indicating HI or LOW

CAUTION: These devices are sensitive to static and care should be taken not to touch the pins on the External devices.

These options are as follows :

- On board Internal Flash ROM
- External (Plugable) Flash ROM
- External PROMs

The various options require that the appropriate links are set.

See previous pages for the correct configuration.

The devices and the sockets both carry an indent or positioning mark; these indents should be matched to ensure the devices are inserted in the correct orientation. Inserting them in the wrong way will damage them.

The On board and External Flash programs can be upgraded to the latest version by down loading from a PC, the EPROM versions will require new EPROMs to be fitted.

Contact your local Markem-Imaje Office or Agent for details.

3.6.7 Switch settings and Potentiometers

SW1 Board Reset

SW2 Printhead Voltage Setting

This is used in conjunction with LK10 to set the correct printhead voltage for the Resistance level of the printhead.

When a new printhead is fitted the Resistance level should first be noted and the printhead voltage chart consulted for the correct setting.

The Chart can be found in Section 13 – Electrical Schematics.

For Cimjet 300 the printhead type is normally a 104 mm x 8 Dots/mm Standard head, and would have Link LK10 set to either the Low or High range, depending on the printhead resistance.

Potentiometers RV1 and RV2

These are used to set the voltage levels for the Label Gap sensor and Ribbon sensor. The default settings are characteristic of standard labels and ribbon, but may not be appropriate for all applications.

The voltage settings can be viewed on the Engineer Mode Diagnostics Screen and the appropriate adjustments made to the voltage potentiometer by passing either a Label with Backing web, or Backing web only in the Gap sensor. The Ribbon sensor can be adjusted by the same method using the Ribbon.

The recommended settings are as follows :

RV1 Label sensor calibration

- | | |
|-------------------------|--------------|
| • Label and Backing Web | <0.5V |
| • Web only (Label Gap) | >1.5V, <2.5V |
| • Empty | >4.0 V |

RV2 Ribbon sensor calibration

- | | |
|------------------|--------|
| • Ribbon present | <2.5V |
| • Empty | >4.0 V |

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3.7 Serial / Laser Card

The Serial / Laser card plugs directly into the main processor board and must be fitted if any of the laser options are to be used.

The Laser parameter options will only be displayed when this card is fitted.

The main components of the board are shown below :

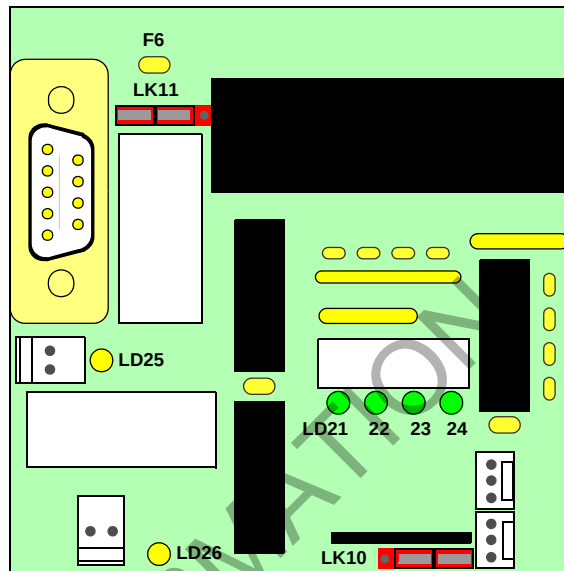


Figure 3-8: Serial / Laser Card

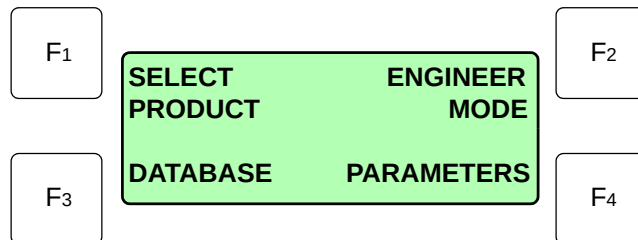
- 9-way D-type connector: Used to program and monitor the Laser verification scanners.
- F6: Fuse for the 5 V supply.
- LK10: Link setting for the Laser "Good Read" output.
 - Default 2345 (this output is not normally used).
- LK11: Link setting for the Laser Gate output.
 - CLV431 positions 1234, DataLogic DS2100 positions 2345
- LD21: Laser Gate input.
- LD22: Laser Good Read.
- LD23: Spare input (No 10)
- LD24: Spare input (No 11)
- LD25: Laser Gate output
- LD26: Spare output (No 11)

3.8 Display I/O

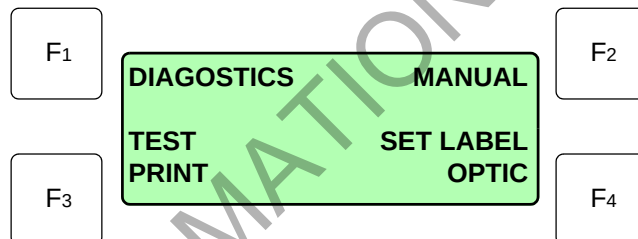
The Diagnostic Display I/O function allows the Operator to monitor the status of the machine Inputs and to activate the machine outputs for testing purposes.

These functions can be accessed from the Engineer Mode screen under Diagnostics.

- Select **ENGINEER MODE**



- Select **DIAGNOSTICS**



The I/O screen can be extremely useful when fault finding.

A full description of the functionality of the Inputs and Outputs follows:

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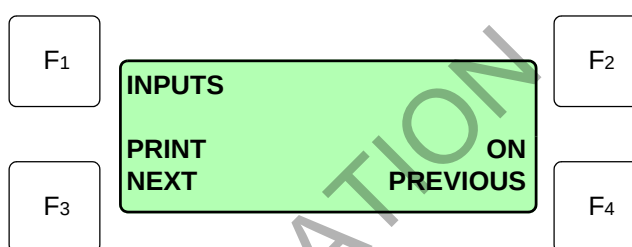
3.9 Inputs

The functionality of various sensors and other inputs can be tested by viewing their status on the Engineer Mode - Diagnostic screen.

- Select **Disp I/O** from the Engineer Mode - Diagnostic screen



The Inputs screen is displayed :



The status of Applicator Inputs is dependant on the type of Applicator fitted. The Applicator Inputs are listed in the individual Applicator sections.

Table 3– 10: Diagnostic Screen - Inputs

Input	Description
Print	Indicates the condition of the Sensor signal to start the print or print and apply sequence. Status: On / Off
Spare Input	Applicator-specific.
Spare Input	Applicator-specific.
Spare Input	Applicator-specific.
Apply	Indicates the condition of the Sensor signal to start the apply sequence. Status: On / Off
Low Web	Indicates the condition of the Low Paper warning sensor. Status: On / Off
Cylinder Home	Indicates the condition of the Applicator Cylinder sensor.
Spare Input	Applicator-specific.
Nip Closed	Indicates the condition of the printhead and Print roller Nip sensor. Status: On / Off
Gate Laser	Indicates the condition of the Laser Gate Sensor. Status: On / Off
Laser Good Read	Indicates the condition of the Laser Good Read Input. Status: On / Off
Product Select	Indicates the condition of the Product Select Input. Status: On / Off
Status Reset	Indicates the condition of the Status Reset function. This can be a signal from an external device such as a PLC. Status: On / Off
Label Gap	Indicates the voltage levels from the Label Gap sensor. These levels will change as labels or backing web are present in the sensor. Status: 0 V - 4.5V

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Table 3– 10: Diagnostic Screen - Inputs

Input	Description
Ribbon	As above but from the Ribbon sensor.
PHD Temp	Indicates the voltage levels from the printhead when not in use. This is a representation of the ambient temperature (20 deg C). Status: Default 0.78 V
Serial Laser Chan 1	Displays any data received on the Serial/Laser card on channel 1. Used for Verification Scanner data.
Serial Laser Chan 2	Displays any data received on the Serial/Laser card on channel 2. Used for Product ID scanners (TU Look up), Product select (Hand scanners) and ASCII Comms.
Print - Head Type	Displays the type of printhead fitted. E.g. 152MM - 8DPMM STD
Database Size	Displays the size of database fitted. E.g. 512 Kb
Image Memory Size	Displays the size of Image memory fitted. E.g. 1024 Kb
Last Packet Received	Displays data form the last comms packet sent, including the Node number, Data and Checksum if sent. E.g. N: 0 T: PFR CS: No
Software Version	Displays the Current Release of Firmware being used in the machine. E.g. P2850 - 11 / 07 / 01
Board Revision	Displays the type of processor board fitted. E.g. REV D

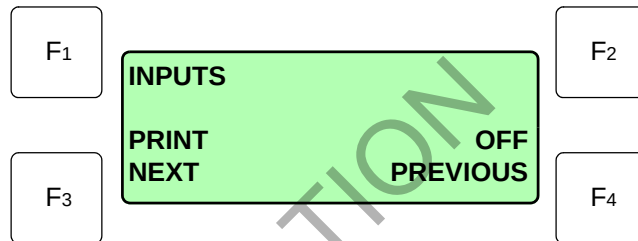
3.10 Outputs

- Select **Disp I/O** from the Engineer Mode - Diagnostic screen

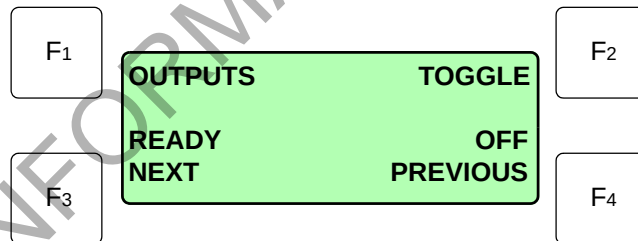


To select the Outputs screen :

- Press the softkey next to **INPUTS**



The Outputs screen is displayed :



The condition of the outputs can be changed by using the **TOGGLE** softkey.

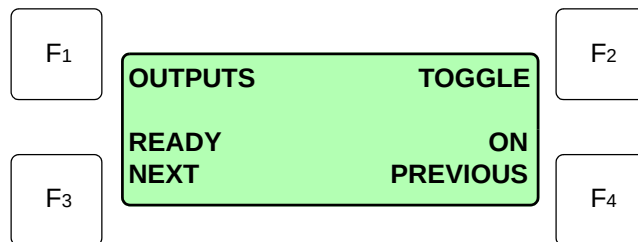


Table 3– 11: Diagnostic Screen - Outputs

Output	Description
Ready	This is used as an input for the conveyor PLC or for a Beacon lamp.
Warning	This is used as an input for the conveyor PLC or for a Beacon lamp.
Reject	This is used as an input for the conveyor PLC or for a Beacon lamp.
Machine Busy	This is used as an input for the conveyor PLC or for a Beacon lamp.
Cylinder Out	This will activate the Applicator cylinder.
Pad Blow	This will activate the Applicator Pad Blow function.
Vacuum / Blow Pipe	This will activate the Applicator Pad vacuum and Blow pipe assist functions.
Spare Output	Applicator-specific.
Spare Output	Applicator-specific.
Head Lift	This will activate the printhead Ribbon save cylinder.
Laser Gate	This will activate the gate signal for a Verification scanner if fitted.
Status Output	The status output is activated after a Status comms message has been sent. The output can be tested by activating the toggle softkey.

FOR INFORMATION

SECTION 4

LASER SCANNERS



FOR INFORMATION

4 Laser Scanners

The Cim* series of machines can support a variety of Barcode readers. These include Verification, Wand and Product Identification scanners.

This section is a generic guide for all Cim* machines including Cimjet 200, Cimjet 300 and Cimpak 300.

4.1 Barcode Verification Scanners

After a label with a barcode has been printed and applied to the product or pallet, it is often necessary to ensure that the barcode is scannable. This can be done by three methods, depending on which level of verification is required: **Full**, **Readability only** or **External**.

Full verification is used where the printed code must agree with the data that the Cimjet/Cimpak has requested. For example, the correct barcode type, number of codes, number of digits and data. The scanned data is compared with the printed data.

This method is more normally used as it gives a more secure scan.

Readability only enables the scanner to read the barcode data, after which the Cimjet/Cimpak will accept the code if readable. The data is not checked to verify if it is correct.

This method can be used in situations where verification can not be completed before the next label is printed.

External verification is used where no serial data is passed to the Cimpak, instead the Good Read Input is checked at the end of the Read time. If the Good Read Input is not active then the read is classed as a Fail. In this case Verification is done by the Scanner.

This option is more commonly used with 2D Barcodes.

Note: Cimpak 300 would normally use Full as the scan time is not an issue with pallet labellers.

The product line application will determine which type of scanner is best suited. This may be a Single line scanner, Multi-line Raster-type scanner or an Imaging scanner.

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Cim* machines can be set up to react in specific ways in the event of a barcode scan failing.

Cimjet normally applies labels to moving products and can have the Consecutive Fails set to 3, for example, after which the machine will Fault out and initiate the Reject Pulse Output.

Cimpak 300 is more versatile in the event of a barcode scan failure, as the pallet is stationary when labels are being applied.

Depending on the Laser parameter setup, Cimpak 300 can react in the following ways in the event of a Verify Failure :

The Cimpak 300 can fault out immediately after one failure.

The Cimpak 300 can initiate the Reject Pulse Output and continue.

The Cimpak 300 can try to re-apply the same product code label **X** number of times.

After a preset number of retries the Cimpak 300 can be set to apply a Reject label. (This can be any design, but must be named **reject** (in lower case)).

The Cimpak 300 can then continue to apply labels to the next pallets until the Consecutive Fails limit has been reached.

Note: The number of Consecutive Fails should be set higher than the number of Re-tries.

An example of how the Cimpak 300 would react with the Laser parameters set as

- **Verify Failure** set to Retry Apply
- **Maximum Retries** set to 2
- **Apply Reject Label** set to Yes
- **Consecutive Fails** set to 5

would be as follows:

The Cimpak 300 would apply the product label.

The scan would fail (Consecutive fail 1).

The Cimpak 300 would apply the label again (Retry 1).

The scan would fail (Consecutive fail 2).

The Cimpak 300 would apply the label again (Retry 2).

The scan would fail (Consecutive fail 3).

The Cimpak 300 would image and apply the Reject label.

The Cimpak 300 would apply the product label again or the next product label (if finished with the first pallet).

The scan would fail (Consecutive fail 4).

The Cimpak 300 would apply the label again.

The scan would fail and the Cimpak 300 would fault out with a Consecutive Reads Error.

Note: These actions will not be effective if the Cimpak 300 is set to Continue or if a Reject label is not available.

For further details about the Laser parameters please refer to Section 6 – Restricted Access Mode User Guide.

SECTION 4 - LASER SCANNERS

4.2 Hand-held or Wand Scanners

When a large Product Database is being used it may take some time to find the required product code when using conventional methods :

- Using the **NEXT** and **PREVIOUS** buttons in Local Database Mode.
- Entering the Product code manually in Host PC Mode.

The latter method is open to human error by entering the wrong code.

For example, if the local database had 500 products and the required code was 499 it could take a considerable time to display the code, ready for selection.

Alternatively, if Host PC mode is used, when entering, for example, a 14-digit code it would be easy to enter the wrong information.

Using the Product Filter option from the Restricted Access Mode parameters would speed the process up for Local database, but may still involve set up time.

Using a Hand-held scanner to read the code from a prepared list of barcodes speeds up the process and helps to eliminate mistakes.

If any variable text is required when selecting the product code, this can also be prepared in barcode form and entered when prompted for after the product code is selected.

This method of product selection requires that the machine is in **Set Mode** displaying the **Select Product** screen.

4.3 Product Identification Scanners

Cim* machines support the ability to select product codes automatically with the machines in Auto Mode.

This function is normally known as Automatic Product ID or Trade Unit code (TU) Lookup – TU Lookup.

This option can be used to select a different product code label for each product or pallet.

A Product ID scanner may be positioned upstream of the labelling station and set to read a pre-printed barcode that has the product name encoded in it. This would be sent to the Cimjet/Cimjet 300 and the appropriate label image ready for printing and applying when the product/pallet arrived at the station.

The product code might be in the form of a pre-printed barcode or alternatively sent direct from a PLC or other Host control system. Whichever method is used, the data being sent should use the conventional ASCII format.

There are two options available:

- **TU Raw**, For example **12345**
- **TU Generic**, For example **[12345]** with square brackets.

If the label also has variable data fields, the information for these can be sent with the data string by using a separator between the Product Code and variable fields. For example, if the label's Product Code was '12345' with two variable fields in the design, the ASCII string (using the TU Generic method) might look like :

[12345|ABC|DEF]

where the separator is the pipe symbol - a double vertical line, one above the other. This method is more suited to data being sent from a Host system rather than a Product ID scanner.

Note: Any data being sent can be viewed on the appropriate Diagnostic Mode Input screen.

SECTION 4 - LASER SCANNERS

Cim* machines have the ability to image one print while the other is being printed. This is achieved by using **Double Buffering**. This means that the application process can be accelerated, especially if the labels have barcodes that require verifying each time.

This also means that the machine can accept a new TU code as soon as the last one is imaged .

Note: When a TU product code is received by the Cimpak/Cimjet, it regards it as an **allocation** of **1**, and will only accept one other TU product code in the buffer until the first one has been printed and applied.

Product code label data can be stored either in the machines Local database or on a remote Host PC running CoLOS Control.

The methods of data retrieval differ for each and an Automatic Product ID Guide is available from Markem-Imaje.

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4.4 Connecting Laser Scanners

The Cim* series machines can support a variety of Laser scanners Including Hand held or Wand scanners, Bar code Verification scanners and Product Identification scanners.

Note: Cimjet 200 / Cimjet 300 requires the optional Serial Laser card to be fitted for use with any of the Scanner or TU lookup options.

The connections for the scanners are listed below:

Wand or Hand-held Scanner connections

Cimjet 200 / Cimjet 300

The Wand option should be selected in the Laser parameters.

The scanner is connected via the 25-way, External I/O connector (X12) on the rear of the machine :

- Pin 23 – TXD2 (RS-232 Optional)
- Pin 24 – RXD2 (RS-232 Optional)
- Pin 25 – RS-232 Ground

Note: A separate power supply is required for the scanner (Normally 5 V or 12 V DC) Cimjet 300 only provides 24 V DC.

Cimpak 300

The Wand option should be selected in the Laser parameters.

The scanner is connected via the 9-way D-type connector (X1) on the rear of the Cimpak. This connector also provides a 5V DC supply for a Scanner if required.

- Pin 2 – TXD (RS232 Optional)
- Pin 3 – RXD (RS232 Optional)
- Pin 5 – RS232 Ground
- Pin 9 – 5V DC

As numerous Handheld and Wand scanner types are available, please consult the manufacturer's Instruction Manual for connection and set up details.

SECTION 4 - LASER SCANNERS

Verification Scanner connections

Various scanner types can be fitted to the Cim* series machines, Markem-Imaje recommend the Erwin Sick CLV 431 for most applications.

Cimjet 200 / Cimjet 300

The Scanner is connected via the 15-way, D-type connector on the rear of the machine. The pin sequence on this connector is configured to accept an Erwin Sick CLV 210 or CLV 410 scanner. The Markem-Imaje recommended Scanner is the CLV 431 which is supplied with the appropriate connector.

The CLV series scanners can be programmed by connecting an RS-232 cable from the 9-way, D-type connector on the Serial Laser card to a PC.

If other types of scanner are used these may require an adapter to suit the pin out. Please consult the relevant wiring schematic of the scanner being used and Section 13 – Electrical Schematics.

Cimpak 300

The Scanner is connected via an interface cable which is routed through the Energy chain to the Applicator. The cable has a 15-way D-type connector at the Energy chain end and 9-way D-type connector into the rear of the Dispenser.

The wiring is configured to suit the Sick CLV431 scanner and if other scanner types are used, the interface cable will require re-wiring to suit. Please consult the manufacturer's Instruction Manual and Section 14 – Electrical Schematics.

The CLV series scanners can be programmed by connecting an RS232 cable from the 9-way D-type connector (X8) on the Buffer Board to a PC.

Product ID Scanner connections

Automatic Product Identification (TU Lookup) can be initiated from a Scanner or from some other source such as a Transport control PLC. In all cases the RS-232 connections are the same.

The TU lookup option should be selected in the Laser parameters

The TU Lookup connections are the same as for a Wand scanner, the distinction between the two options is made when setting up the Laser parameters.

As with Wand scanners, a separate power supply is required for the Product ID scanner.

Cimjet 200 / Cimjet 300

The scanner is connected via the 25-way, External I/O connector (X12) on the rear of the machine :

- Pin 23 – TXD2 (RS-232 Optional)
- Pin 24 – RXD2 (RS-232 Optional)
- Pin 25 – RS-232 Ground

The CLV series scanners can be programmed by connecting an RS232 cable from the 9-way, D-type connector on the Serial Laser card to a PC.

Cimpak 300

The connections for a Product ID scanner or Host PC or PLC are on the I/O Interface board in the cabinet at the base of the Cimpak. The **X3** – 12-way Terminal block provides connections for RS232 comms for TU Lookup and for Scanner programming.

The Switch, **S1**, should be in the down position for programming and returned to the up position when in use.

- Pin 6– RXD input to TXD Host port
- Pin 12–RXD input to TXD Setup
- Pin 7– TXD output to RXD Host port
- Pin 11–TXD output to RXD Setup
- Pin 4– 0V Signal

For full details please refer to Section 14 – Electrical Schematics (**Drawing No.: 5550382**).

SECTION 4 - LASER SCANNERS

ASCII Comms connections

The ASCII Comms function can be initiated from a Transport control PLC or other Host system. In all cases the RS-232 connections are the same.

The ASCII Comms option should be selected in the Laser parameters.

Cimjet 200 / Cimjet 300

The ASCII Comms connections are the same as for a Wand scanner, the distinction between the two options is made when setting up the Laser parameters.

The ASCII RS-232 Comms are connected via the 25-way, External I/O connector (X12) on the rear of the machine :

- Pin 23 – TXD2 (RS-232 Optional)
- Pin 24 – RXD2 (RS-232 Optional)
- Pin 25 – RS-232 Ground

Cimpak 300

The connections for the ASCII Comms (PLC Comms) function are on the I/O Interface board in the cabinet at the base of the Cimpak. The **X2** – 12-way Terminal block provides connections for RS232 comms.

- Pin 8– TXD output to RXD Host port
- Pin 9– RXD input to TXD Host port
- Pin 10–0V signal

For full details please refer to Section 14 – Electrical Schematics (**Drawing No.: 5550382**).

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SECTION 5

TROUBLESHOOTING

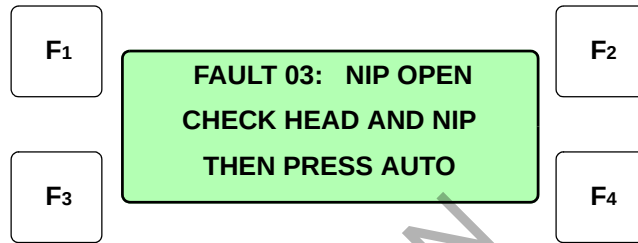
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5 Troubleshooting

This section provides guidelines for solving problems related to the Cimjet 300 Dispenser. For information relating to applicator specific problems please refer to the relevant applicator section.

5.1 Error Messages in Auto Mode

If a fault occurs Cimjet 300 comes out of Auto mode and the error message is displayed. This includes a suggestion on how to clear the fault, for example:



When Cimjet 300 is in error, the machine ready output is opened and the fault output closes.

The following tables list the errors that can occur, together with the remedial action required to rectify the fault. If the fault cannot be cleared, refer to Section 8 – Technical Guide for further details or seek qualified technical assistance.

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5.2 Power Up Error Messages

These errors can be generated when the Cimjet 300 is powered up. If the battery backed RAM is corrupt one of the following messages will be displayed:

Table 5– 1: Power Up Error Messages

Message	Indication / Action
Parameters Lost	Indicates that the label database is OK, but the set up parameters are corrupt. Check all set up parameters to ensure correct operation.
Files Lost	The parameters are OK, but the label Database has become corrupt. Download all label data again to ensure correct operation.
Memory Lost	Both the Parameter data and the label Database have become corrupt. Both must be re-entered. Re-power the machine whilst pressing the Enter and Exit keys at the same time. This will clear any corruption in the processor.

5.3 Start Up Error Messages

Table 5– 2: Start Up Error Messages

Message	Action
Low Web	Indicates that the label supply is getting low. This is only a visual warning and does not stop Cimjet 300 operating.
No Web	The Label Gap sensor is not detecting labels. If labels are loaded check that the labels are passing through the label gap optic sensor. If labels are present re-set the label gap optic from the Engineer Mode Parameters.
No Ribbon	The ribbon supply is empty or the ribbon is not passing through the end of the ribbon sensor.
Nip Open	Ensure that the printhead is lowered and the nip roller has been secured back in place.
Missing Label	The Cimjet 300 has detected that there are labels missing from the web. This can cause products to be unlabelled. Check the label stock for missing labels and replace the reel if necessary.

5.4 Font Download Error Messages

Table 5– 3: Font Download Error Messages

Message	Action
Failed, Font Limit Exceeded	You have attempted to down load more scalable fonts than your font licence allows. Reduce the number of fonts in your designs or contact Markem-Imaje or your local distributor to increase your font licence.

5.5 File Transfer Error Messages

Table 5– 4: File Transfer Error Messages

Message	Action
Failed, Not Enough Memory To Download	There is not enough space available in the Cimjet 300 internal memory to store all the information required. Delete unrequired information and try again.

SECTION 5 - TROUBLESHOOTING

5.6 Other Error Messages

You may see other errors, e.g. **CYLINDER FAULT** which are associated with the applicator.

A complete List of all Cim* series machine Error messages follows:

Table 5– 5: Other Error Messages

Fault Number	Description / Action
01	NO WEB CHECK LABEL SENSOR THEN PRESS AUTO
02	NO RIBBON CHECK RIBBON SUPPLY THEN PRESS AUTO
03	NIP OPEN CHECK HEAD AND NIP THEN PRESS AUTO AND FEED RIBBON
04	CYLINDER FAILED TO RETURN HOME PRESS AUTO
05	MISSING LABEL CHECK LABEL SUPPLY THEN PRESS AUTO
06	MISSING GAP CHECK LABEL SENSOR THEN PRESS AUTO
07	PACK SPACING INCREASE SPACING THEN PRESS AUTO
08	LOW AIR CHECK AIR SUPPLY THEN PRESS AUTO
09	E-STOP RELEASE E-STOP THEN PRESS RESET TO CLEAR
10	PAD NOT HOME PUSH PAD HOME THEN PRESS AUTO
11	GUARD OPEN CLOSE GUARD THEN PRESS RESET
12	NO PRODUCT DETECTED PRESS AUTO
13	LASER DATA FRAMING ERROR CHECK LASER SETUP THEN PRESS AUTO
14	CONSECUTIVE NUMBER OF BAD READS REACHED PRESS AUTO
15	NO LASER DATA RX CHECK CONNECTION THEN PRESS AUTO

SECTION 5 - TROUBLESHOOTING

Table 5– 5: Other Error Messages

16	LASER DATA TRANSMISSION ERROR PRESS AUTO
17	WARNING: ALLOCATION COMPLETED SEND NEW ALLOCATION OR PRESS AUTO TO CLEAR
18	APPLICATOR ARM NOT HOME PRESS AUTO
19	NO LABEL HAS BEEN DETECTED ON THE APPLICATOR PRESS AUTO
20	PAD HAS FAILED TO RETURN HOME PRESS AUTO
21	SSCC OUT OF RANGE ENTER CORRECT VALUE THEN PRESS AUTO
22	CYLINDER 1 TIMED OUT PRESS AUTO
23	CYLINDER 2 TIMED OUT PRESS AUTO
24	PAD ROTATE TIMEOUT PRESS AUTO
25	APPLICATOR OBSTRUCTED IN CYCLE PRESS AUTO
26	NO REJECT LABEL AVAILABLE PRESS AUTO
27	TU JOB NOT SELECTED PRESS AUTO
28	NO TU JOB NAME RCVD PRESS AUTO
29	DATA LOGGING FAILED / DATABASE FULL PRESS AUTO
30	VERIFICATION FAILED PRESS AUTO
31	SENSOR MODE / CYCLE 1 EXPECTED / CYCLE 2 DETECTED. PRESS AUTO
32	SENSOR MODE / CYCLE 2 NOT DETECTED PRESS AUTO
33	SENSOR MODE / PALLET PRESENT / REMOVED IN CYCLE 1 PRESS AUTO
34	SENSOR MODE / CYCLE 2 INPUT BEFORE EXPECTED PRESS AUTO

SECTION 5 - TROUBLESHOOTING

Table 5– 5: Other Error Messages

35	PLC MODE / CYCLE 2 DETECTED / NO CYCLE 2 DEFINED PRESS AUTO
36	HOST PRINT / CYCLE 2 DETECTED / NO CYCLE 2 DEFINED PRESS AUTO
37	TU ERROR: BUFFER FULL PRESS AUTO
38	TU JOB NOT FOUND PRESS AUTO

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5.7 Label Selection Problems

A valid label or test pattern must be present in the printer memory for the Cimjet 300 to be able to print. Selection is normally performed by using the Select Product function in Set Mode or selecting Test Print in Engineer Mode. In cases where Cimjet 300 is connected to a Network running Markem-Imaje's CoLOS Control software package, label information may be stored on a PC away from the machine.

When selecting a label, all the relevant information must be stored in the Cimjet 300's local database or on the Host PC running CoLOS Control.

If using the Cimjet 300 in Local Database mode, check the Engineer Mode/View Database option to ensure that all the required information is present in the Database, i.e. Format, Label information, Logo's and Fonts. If any of the information is missing label selection problems will arise.

If a Host PC is being used it is important that the communication parameters are set correctly for the PC and the Cimjet 300.

Cimjet 300 can receive label information in 2 different ways :

- Retrieve it from the Host PC using CoLOS Control
- The Host PC transmits it to Cimjet 300 using CoLOS Control.

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SECTION 5 - TROUBLESHOOTING

5.8 Communications Problems

If you cannot download information from your Host PC check the following :

RS-232 and RS-485

- Are you using the correct cable?
- Is the cable connected to the HOST port on the Cimjet 300 and to the correct Host port?
- Ensure that the cable is sound, e.g. No broken wires or shorts between wires.
- Check that the communications parameters for the Cimjet 300 and the host computer match.

These are :

Communications Speed (Baud Rate)

This is set in Restricted Access Mode.

Data Bits, Stop Bits and Parity

Cimjet 300 always uses 8 data bits, 1 stop bit and No parity.

- Is the Cimjet 300 set for the correct communications type, e.g. RS-232 or RS-485?
- Is the correct protocol being used, e.g. CIMCOMMS or EMULATION in restricted mode?

RS-485 Specific Problems

- Check all wiring to all machines on the network.
- Ensure that all nodes have the same communications parameters and that each node has a unique node number.
- Are all nodes controlling TX-enabled correctly? If one node is not removing TX-enable when not transmitting, all nodes will behave unpredictably.
- If a non-Markem-Image Host system is being used, ensure that it is controlling TX-enable correctly and that there are no pauses in the middle of message transmissions.

5.9 Label Corruption Problems

Labels and formats can occasionally become corrupted and this may be seen in the form of missing text fields or other symptoms on the printed label.

To ensure that the label and format are as they should be, it is best to clear the problem labels and formats out of the machine database and re-download the design again.

To ensure that no remnants of the corrupted Label are left in the printer memory select a Test Print from Engineer Mode before re-selecting the label.

5.10 Selecting the Correct Resolution

When designing formats with Markem-Image's CoLOS Create Pro it is important to select the correct printer type. With Thermal printers the resolution is normally 8 dots/mm or 12 dots/mm and selecting the correct one for the type of printer being used is important.

If a label designed for a 12 dot/mm printer is downloaded to a 8 dot/mm printer or vice versa, the image will be corrupt when printed.

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SECTION 5 - TROUBLESHOOTING

5.11 Missing Print

If parts of text, logos or barcodes are missing from the label, always check the following :

- Is the label stock loaded with the correctly sized label stock for the design?
If a smaller label is used, fields which extend off the label will not be printed.
- Are the printer parameters, Feed Adjust and Backfeed, set correctly?

When labels are printed the trailing edge of the label has to be fed off the label's peel bar (Beak) so that it can be picked up by the Applicator pad. The leading edge of the following label is also fed past the print line by approximately 11 mm. Cimjet 300 has the ability to "backfeed" the next label so that printing can start as close to the label edge as possible. This allows the entire label area to be used at the next print cycle.

The Feed Adjust parameter determines how far the first label is fed, and the Backfeed determines how far the second label is fed back. If these parameters are not correct the first part of any label may be unprintable.

The Default settings are :

- **Feed Adjust** - 0 (i.e. 0 mm)
- **Backfeed** - 115 (i.e. 11.5 mm)

5.12 Machine Not Printing

If the machine is not printing the label, but appears to be functioning correctly, check the following :

- Are the print/apply inputs being triggered?
Use the Diagnostics/Inputs or Outputs screens to check the operation.
- Make sure that a valid label or Test Print has been selected.
- Are the labels webbed up correctly?
- Is the correct ribbon type loaded onto the machine and driving correctly?
If not, clean the ribbon drive rollers and make sure that the nip is closed correctly.
- Is the ribbon loaded with the ink side facing away from the printhead and towards the label?
Cimjet 300 series machines use "Outside Inking Ribbon"
- Check that the print speed and darkness value are set to acceptable levels.
- Check that the print head is coming into contact with the print roller.
- If a new printhead has been fitted, are the printhead volts set correctly?
- Is the printhead damaged?

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SECTION 5 - TROUBLESHOOTING

5.12.1 Print Quality Problems

Print quality is dependant on :

- Quality of the labels and ribbon being used.
- Print darkness and print speed combination.
- Type of printhead used.
- The condition of the machine being used to print.

Thermal transfer or Direct thermal paper (No ribbon) can be used on the Cimjet 300. The age and storage conditions can also affect the print quality.

The print-head should be kept clean by using isopropanol wipes, and should never be touched with any abrasive material or metallic objects.

The Test print function is the best way of setting the machine print standards, i.e. evenness of print, positioning of the image and checking for damage to the dots.

To print the Test pattern :

- Press **ENGINEER MODE**
- Press **TEST PRINT**

Note: If the grey Test print does not cover the whole of the label area, check that the Test pattern size has been set up in the Restricted Access/Label/Image parameters. The Height and Width of the Test pattern are established here.

Vertical black lines on the label normally indicate that the printhead requires cleaning. Vertical white lines or wide bands normally indicate that the printhead is damaged.

If one or two of the printhead dots have been damaged it may still be possible to use it on certain designs. Alternatively, if vertically printed (picket fence) barcodes are being used, it may be that the white lines from the damaged dots pass through a vertical barcode line and make it un-scannable.

Using too high a Print Darkness level can have an adverse affect on the print quality as this can cause the print to turn grey.

If achievable, lower Print speeds and Print Darkness levels produce better print quality.

Poor Print quality may be the result of :

- A dirty printhead or print roller. Always try cleaning the printhead thoroughly before trying another solution.
- Incorrect Print speed and or Print Darkness levels.
- Bad ribbon to label combination.
- A damaged printhead or print roller. These items cannot be repaired and must be replaced.
- Incorrect ribbon and label clutch settings
- Incorrect Ribbon Save configuration (if being used).
- Incorrect air pressure setting for the printhead dynamic head.
- Incorrect print head voltage setting.
- Poor ribbon/paper match.
- Incorrect positioning of the printhead plunger.

5.12.2 Setting the Printhead Pressure Point

To set the Printhead Pressure Point, carry out the following procedure :

- Press **ENGINEER MODE**.
- Press **TEST PRINT**.

The machine now prints a grey test label.

- If the print density varies across the width of the label move the printhead pressure point towards the light area.
- To do this: release the nip screw on the print head plunger, move the plunger and tighten the nip screw.

Note: Repeat this process until the print density is evenly spread across the full width of the print.

If the previous procedures do not improve print quality to an acceptable level, check the printhead and check the condition of the print roller. One or both may need to be replaced.

SECTION 5 - TROUBLESHOOTING

5.13 Label Feed Problems

Label feed problems can be caused by :

- Machine being incorrectly webbed
- Drive belt slipping
- Stepper motor stalling
- Faulty gap sensor
- Incorrect parameter settings

If, for example, the stopping position were consistently wrong the most likely cause would be the parameter settings, e.g. the Feed distance or Backfeed distance.

If the stopping position is inconsistent, the cause is more likely to be one of the other possibilities, e.g. Drive belt slipping or Stepper motor stalling.

5.13.1 Incorrect Label Stopping Position

If the label stopping position is incorrect after datum labels have been fed and the stop position is consistent, check the following :

- **FEED ADJUST** parameter
- **BACKFEED** parameter

See Section 6 – Restricted Access Mode User Guide (Printer Parameters)

5.13.2 Erratic Label Feeding

If the labels are feeding erratically, the gap optic settings may need adjusting. To set the gap optic, carry out the following procedure :

- Press **ENGINEER MODE**
- Press **SET LABEL OPTIC**

The machine will now feed datum labels and determine the optimum sensor signal for the label/web and web.

- Ensure that the **Outer** Label guide collars are set to the width of the label size being used, as this will stop the label from tracking in and out of the Gap sensor.

Note: Do not adjust the **Inner** collars as these are set to a fixed distance from the baseplate.

5.13.3 Inconsistent Label Stopping Position

If the label stops in the correct position when datum labels are fed but, the stop position is inconsistent after this :

- Check that the label gap is not stopping in the label Gap Optic. This may be purely coincidental because of the label size, but will cause feed problems.

If this happens, move the sensor to the alternative position on the baseplate and amend the Optic adjust parameter accordingly.

See Section 6 – Restricted Access (Printer Parameters)

- Drive problems such as drive slippage or ribbon drive problems could also cause variations in label stop position.

SECTION 5 - TROUBLESHOOTING

5.14 Ribbon Problems

5.14.1 Ribbon Breakage

Check for seized or stiff clutch components in the ribbon drive.

If horizontal lines are being printed across the full width of the label and the darkness is set too high, the ribbon will be weakened and this can cause ribbon breakages. In this case, you should reduce the Print Darkness level.

5.14.2 Ribbon Creasing

This is the result of “tracking” of the ribbon or label web, e.g. the ribbon/web is tending to move perpendicular to the drive direction.

Check for :

- Bent ribbon or label drive rollers.
- Variation in the ribbon core sizes.
- A bent label peel bar (beak).
- Incorrect positioning of the web nip roller. This should be in the centre of the web.

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5.15 No Driving of Labels or Ribbon

Check the following :

- Ensure that the clutches are operating correctly
- Are any of the drive belts broken?
- No motor voltage, check fuses and motor voltage test point
- Check the external motor control link is in position - LK9 on the main PCB

5.16 Motor Stalling

Label feed problems and ribbon problems could also be caused by the motor stalling.

The following problems may be the cause :

- The machine is webbed up incorrectly
- The brake band mechanism is too tight
- Incorrect drive belt tensions
- Incorrect clutch tensions
- Loose connections to the Stepper Motors
- Seized rollers or loose drive pulleys

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SECTION 6

RECOMMENDED SPARES

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6 Recommended Spares

Preventative Maintenance Spares Kits are listed below. These are followed by General Spares Kits.

6.1 Preventative Maintenance Spares Kits

Table 6– 1: Printhead Cleaning

Part No.	Qty	Description
5824648	100	Cleaning Pads
B03285AA	1	Chalk for Printhead Roller Cleaning Fluid (150 ml) Cotton Buds
B03286AA	1	Cleaning Fluid Top Up (400 ml)

Table 6– 2: Printheads

Part No.	Qty	Description
B03800AA	1	Thermal Printhead – Flat, 100 mm, 200 dpi (8 dot)
5824764	5	Thermal Printhead – Flat, 100 mm, 200 dpi (8 dot)
B04265AA	1	Thermal Printhead – Flat, 100 mm, 300 dpi (12 dot/mm)
5824765	5	Thermal Printhead – Flat, 100 mm, 300 dpi (12 dot/mm)
B04359AA	1	Thermal Printhead – Corner Edge, 100 mm, 300dpi (12 dot/mm)
5824766	5	Thermal Printhead – Corner Edge, 100 mm, 300dpi (12 dot/mm)
B04420AA	1	Thermal Printhead – Flat, 150 mm, 200 dpi (8 dot/mm)
5824767	5	Thermal Printhead – Flat, 150 mm, 200 dpi (8 dot/mm)

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Table 6– 3: Dynamic Printhead Spares Kits

Part No.	Qty	Description
10016916	1	Dynamic Printhead Assembly RH Flat, 100 mm
10016918	1	Dynamic Printhead Assembly RH Flat, 150 mm
10016919	1	Dynamic Printhead Assembly RH Corner Edge, 100 mm
10023445	1	Dynamic Printhead Assembly LH Flat, 100 mm
10023447	1	Dynamic Printhead Assembly LH Flat, 150 mm
10023446	1	Dynamic Printhead Assembly LH Corner Edge, 100 mm

SECTION 6 - RECOMMENDED SPARES

Table 6– 4: Dynamic Printhead Pneumatics Kit 100mm - 32244BA

Part No.	Qty	Description
B03308AA	1	Solenoid Valve
B03133AA	1	Air Regulator
B03623AA	1	Pressure Gauge
B03624AA	1	Mounting Bracket
B03762AA	1	Silencer
B03588AA	1	Bulkhead Fitting
B03589AA	2	Tube Fitting
B03625AA	3	Straight Connector
B03591AA	1	Tubing
B01182AA	2	M3 x 25 Skt Hd Cap
B00215AA	2	Fastening
B00216AA	4	M3 Plain Washer
B00217AA	4	M3 Shakeproof Washer
B03764AA	1	Molex Crimp Housing
B03765AA	2	Molex Crimp
B03853AA	1	Reducer
B02833AA	1	Tubing

SECTION 6 - RECOMMENDED SPARES

Table 6– 5: Dynamic Printhead Pneumatics Kit 150mm - 35802BA

Part No.	Qty	Description
B03308AA	1	Solenoid Valve
B03133AA	1	Air Regulator
B03623AA	1	Pressure Gauge
B03624AA	1	Mounting Bracket
B03762AA	1	Silencer
B03588AA	1	Bulkhead Fitting
B03589AA	2	Tube Fitting
B03625AA	5	Straight Connector
B03591AA	1	Tubing
B01182AA	2	M3 x 25 Skt Hd Cap
B00215AA	2	Fastening
B00216AA	4	M3 Plain Washer
B00217AA	4	M3 Shakeproof Washer
B03853AA	1	Reducer
B02833AA	1	Tubing

SECTION 6 - RECOMMENDED SPARES

Table 6– 6: Maintenance Kit A – 100 mm (36138BA)

Part No.	Qty	Description
36138BA	1	Uptime Kit A (Change every year) 4" - 100 mm Wide Unit includes :
5825345	1	Printhead Drive Roller Assembly 100mm wide (Assembled)
33110BA	1	Felt Washer Kit
5825344	1	Nip Roller Assembly (Assembled)

Table 6– 7: Maintenance Kit A – 150mm (36139BA)

Part No.	Qty	Description
36139BA	1	Uptime Kit A (Change every year) 6" - 150mm Wide Unit includes :
5825407	1	Printhead Drive Roller Assembly 150mm wide (Assembled)
33110BA	1	Felt Washer Kit
5825406	1	Nip Roller Assembly (Assembled)

Table 6– 8: Maintenance Kit B (36140BA)

Part No.	Qty	Description
36140BA	1	Uptime Kit B (change 6 months after Kit A) includes :
33110BA	1	Felt Washer Kit
5825198	1	Brake Band

SECTION 6 - RECOMMENDED SPARES

6.2 General Spares Kits

Table 6– 9: General Spares Kits

Part No.	Qty	Description
5564717	1	100 mm Wide Idler Roller Assembly
5564718	1	150 mm Wide Idler Roller Assembly

Table 6– 10: Foil Drive Roller – 100 mm (5825408)

Part No.	Qty	Description
5825408	1	Foil Drive Roller Assembly – 100mm wide

Table 6– 11: Foil Drive Roller – 150 mm (5825409)

Part No.	Qty	Description
5825409	1	Foil Drive Roller Assembly – 150mm wide

SECTION 6 - RECOMMENDED SPARES

Table 6– 12: Basic Spares Dispenser Kit (5824658)

Part No.	Qty	Description
34227BB	1	Label Gap Sensor
34228BA	1	Foil Present Sensor
31A58A	1	Nip Sensor
33110BA	1	Felt Washer Kit
B04297AA	1	Spare Main Fuse (T5A)
33109BA	1	Web and Foil Drive Timing Belt Kit
32621BB	1	Cimjet Operator Interface (Assembled)

Table 6– 13: Basic Spares Kit with CPU Board (35278BA)

Part No.	Qty	Description
31A82D	1	CPU Board Mk2

Table 6– 14: Optional Spares

Part No.	Qty	Description
5824946	1	Beacon Light Assembly
31A63A	1	Serial/Laser PCB
5824602	1	Ethernet Kit
31A104A	1	Deep Gap Sensor assembly
36173BA	1	Erwin Sick CLV 431 Laser Scanner Pack Includes Serial Expansion card, Conveyor mounting bracket and software.
31A63A	1	Serial / Laser Expansion card,

SECTION 6 - RECOMMENDED SPARES

Table 6– 15: LH Dispenser Change Parts Assembly - 5824689

Part No.	Qty	Description
5824692	1	Machine Cover LH
34095BA	1	Print Roller Bearing Housing LH
5364271	1	D-connector Strip LH
32822BA	1	Webbing Diagram LH
32947BA	1	Identification Label LH
B03636AA	4	Screwlock
B00215AA	1	Fastener
B00216AA	2	M3 Plain Washer
B00217AA	2	M3 Shakeproof Washer
B01171AA	2	M3 Full Nut
B05088AA	2	M3 Ext Star Lock
B03697AA	1	M3 x 20 Socket Set Screw

Table 6– 16: RH Dispenser Change Parts Assembly - 5824690

Part No.	Qty	Description
5824691	1	Machine Cover RH
34094BA	1	Print Roller Bearing Housing RH
5364272	1	D-connector Strip RH
32586BA	1	Webbing Diagram RH
32946BA	1	Identification Label RH
B03636AA	4	Screwlock
B00215AA	1	Fastener
B00216AA	2	M3 Plain Washer
B00217AA	2	M3 Shakeproof Washer
B01171AA	2	M3 Full Nut
B05088AA	2	M3 Ext Star Lock
B03697AA	1	M3 x 20 Socket Set Screw

FOR INFORMATION