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applicator manual ■ ■ ■

Cimjet 331®



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SECTION 1

OVERVIEW

1 Overview

1.1 Introduction

This guide gives details of the installation, use and maintenance of the Cimjet 331 Applicator.

If you need information on the basic use of your Cimjet 300 refer to the Cimjet 300 Dispenser Manual.

1.2 The Cimjet 331 Applicator

The Cimjet 331 prints and applies labels to either the top or sides of the product. The product can be stationary or moving along a conveyor.

Figure 1-1 shows a Left hand machine, with the applicator set to apply labels to the side of packs.

Labels are blown onto the product using a set of 16 pipes inside the applicator. The pipes, in conjunction with the front diffuser allow the air to be blown evenly over the label area. The pipes can be easily re-arranged to cater for various label types and sizes without the need for change parts.

Suggested pipe configurations are provided in Section 2.

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1.3 Applicator components

All descriptions and illustrations are for a Left Handed Cimjet 331.

The major components of the applicator are shown in Figures 1-1, 1-2, 1-3 and 1-4:

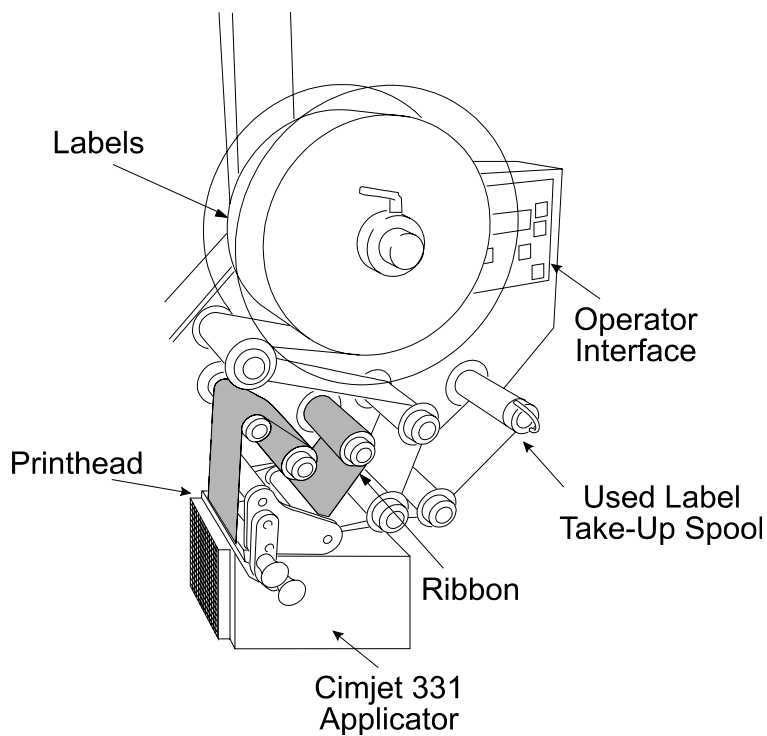


Figure 1-1: General View of the Cimjet 331

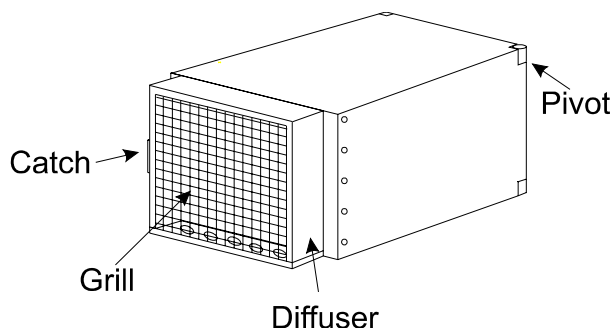


Figure 1-2: Front View of Cimjet 331 Applicator

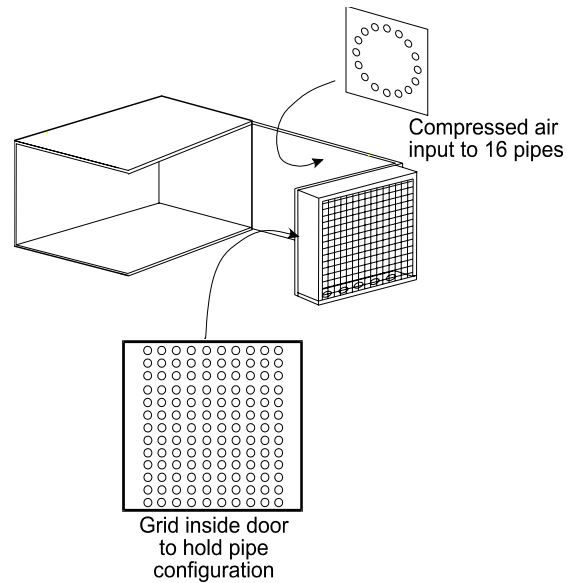


Figure 1-3: Inside View of Cimjet 331 Showing Position of Air Input and Grid for Pipes

Note: For simplicity, this illustration does not show other components within the applicator.

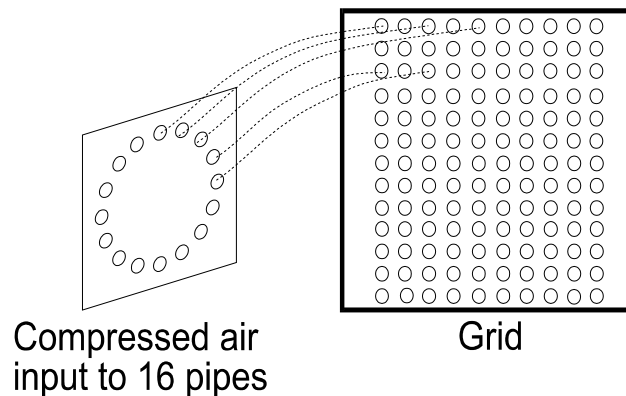


Figure 1-4: Cimjet 331 Showing How Pipes are Connected Between Input and Grid

Note: There are 16 pipes inside the applicator. For simplicity, the dotted lines shown only represent how the pipes connect between the input and the grid inside the applicator.

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1.4 Applicator Operation

1.4.1 Application

The Cimjet 331 accepts labels from the Dispenser, retaining them on a grill which has a constant vacuum caused by a Fan. When the product is in position, the blow solenoid is operated and air jets are used to blow the label onto the product. This method of label application allows a product to be labelled without stopping the line and can accommodate a variation in case position.

The 331 Applicator has no moving parts and can therefore apply labels a faster rate than other methods of application.

The pneumatic valves are mounted inside the applicator.

1.4.2 **Print and Apply Sensors**

The Cimjet 331 uses a combination of print sensors and apply sensors to trigger the printing and application of the label.

M18 barrel sensors are provided with the machine. These sensors are PNP, polarized, retroreflector type.

Depending on the mode of operation (set via the Restricted Parameters menu) the following sensors are used:

Mode	Sensors Used
Auto Apply	Print Sensor
On Demand	Print Sensor and Apply Sensor
Pre-print	Apply Sensor

Auto Apply

A print sensor triggers the printing of the label, which is then applied to the packs after any Apply Delay time has elapsed.

On Demand Mode

A print sensor triggers the printing of the label. This is followed by an apply sensor which triggers the application of the label.

Pre-print

The label is automatically pre-printed and kept on the pad ready to be applied. An apply sensor triggers the application of the label.

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1.5 Application cycle

The application cycle starts when a signal is received to print a label.
Alternatively, Cimjet 331 automatically pre-prints the label in pre-print mode.

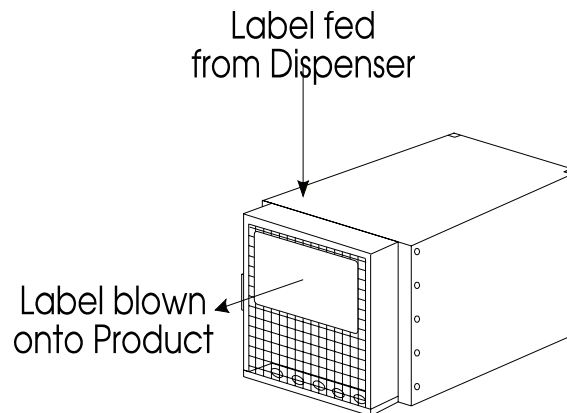


Figure 1-5: Cimjet 331 Application Cycle

1.5.1 Auto Apply Mode

Auto Apply mode uses only the print signal. The application cycle starts when a print signal is received. The label is printed and is dispensed onto the applicator grill. The blow pipe on the dispenser supplies an airjet which ensures that the label is securely dispensed on the grill, where it is held, ready to be applied.

An integral fan draws air through the applicator and holds the label on the applicator grill. When the label arrives at the grill, the Settling Time parameter starts; this allows the label to adhere to the applicator grill before application onto the product. No further action is taken until the Settling Time expires.

The Apply Delay timer is started. When this elapses, the Blow Time parameter is started and the label is blown onto the product using compressed air via the pipe configuration inside the applicator. Compressed air is blown through the pipe configuration until the Blow Time parameter expires; the air is then turned off.

1.5.2 On-Demand Mode

On demand mode uses a print signal and an apply signal. The application cycle starts when a print signal is received. The label is printed and is dispensed onto the applicator grill. The blow pipe on the dispenser supplies an airjet which ensures that the label is securely dispensed on the grill, where it is held, ready to be applied.

An integral fan draws air through the applicator and holds the label on the applicator grill. When the label arrives at the grill, the Settling Time parameter starts; this allows the label to adhere to the applicator grill before application onto the product. No further action is taken until the Settling Time expires.

When an Apply signal is received, the Apply Delay timer is started. When this elapses, the Blow Time parameter is started and the label is blown onto the product using compressed air via the pipe configuration inside the applicator. Compressed air is blown through the pipe configuration until the Blow Time parameter expires; the air is then turned off.

1.5.3 Pre-Print Mode

Pre-print mode uses an apply sensor. A label is held on the applicator grill ready to be applied. This allows the maximum throughput to be achieved.

At the start of the application cycle, the label is printed and is dispensed onto the applicator grill. The blow pipe on the dispenser supplies an airjet which ensures that the label is securely dispensed on the grill, where it is held, ready to be applied.

An integral fan draws air through the applicator and holds the label on the applicator grill. When the label arrives at the grill, the Settling Time parameter starts; this allows the label to adhere to the applicator grill before application onto the product. No further action is taken until the Settling Time expires.

When an Apply signal is received, the Apply Delay timer is started. When this elapses, the Blow Time parameter is started and the label is blown onto the product using compressed air via the pipe configuration inside the applicator. Compressed air is blown through the pipe configuration until the Blow Time parameter expires; the air is then turned off.

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SECTION 2

INSTALLATION

2 Installation

This section covers the additional installation requirements. This includes the positioning of the Cimjet 331, the positioning and connection of the sensors and the power and air requirements. Standard installation requirements are detailed in the Cimjet 300 Dispenser manual.

2.1 Fitting the Applicator to the Cimjet Dispenser

Your Cimjet 300 is normally supplied with the 331 applicator fitted.

If you are fitting a **new applicator** or **changing the type of applicator** proceed as follows:

1. Switch off machine power and disconnect the main power cable.
2. Switch off the air supply if fitted.
3. Remove the existing applicator if fitted.
4. Remove the rear cover of the machine.
5. Bolt the Cimjet 331 applicator into position.
6. Connect the air supply pipes to the relevant pneumatic schematic.
7. Connect the applicator wiring according to the electrical schematics
8. Ensure that the **“Correct Applicator Type”** is selected in the Machine Options parameters.

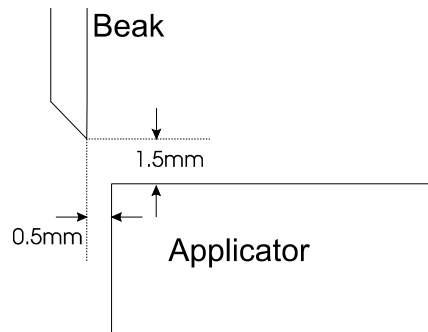


Figure 2–1: Applicator position relative to beak

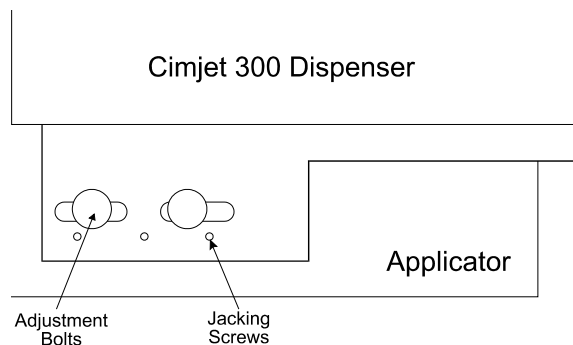


Figure 2–2: Adjustments on Rear of Applicator

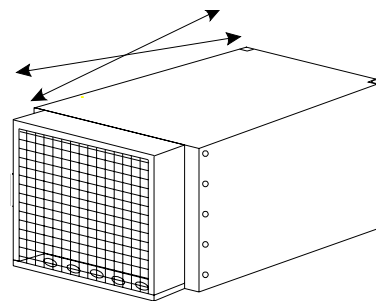
SECTION 2 - INSTALLATION

The position and alignment of the applicator can be adjusted using the two adjustment bolts and three jacking screws on the rear of the applicator.

Adjustment bolts:

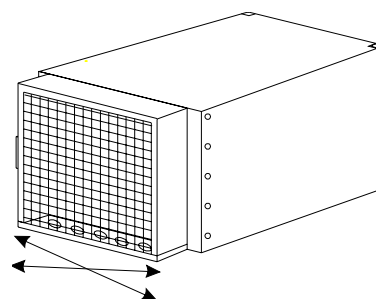
Use the adjustment bolts to change the alignment along the length of the applicator.

The applicator should be aligned squarely with the beak.



Jacking screws:

Use the jacking to ensure that the applicator is parallel to the beak.



-
- Connect the air supply pipes to the relevant pneumatic schematic.
 - Connect the applicator wiring according to the electrical schematics.

2.2 Wiring the Applicator

1. Switch off machine and disconnect the machine power.
2. Remove the rear cover from the machine.
3. Connect the applicator inputs and outputs to the Main Control board:

Table 2– 1: Applicator Wiring

Signal	Connector
Fan	X14
Air Assist Blow Pipes	X18
Air Blow jet	X20

For the 331 Applicator we have supplied the Electrical Schematics at the rear of this Applicator Guide. If, however, you require the following details, please refer to your Cimjet 300 User Guide:

- Full Wiring Details
- Access to Fault and Warning Connections Installing sensors and conveyor control

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2.3 Positioning the Applicator

The Cimjet 331 applies labels to the tops or side of packs. The standard cylinder applies labels up to 60mm from the edge of the machine baseplate.

Dependent on the type of conveyor used the Cimjet can be mounted to overhang the conveyor by up to 250mm.

Two factors determine the position of the label on the pack:

- The position of the applicator relative to the conveyor.
This sets the label position at 90 degrees to the product motion.
- The position of the sensors and the setting of the Apply Delay.
These factors affect the position in the direction of the product motion.
- Once a suitable combination of these two factors has been determined, the stability of the machine should be checked. If the Cimjet 331 could become unstable, it must be secured in place by fixing the stand to the floor or bracing it to the conveyor.
- The machine should be mounted square to all the products.

2.4 Connecting External Sensors

2.4.1 Wiring the Sensors

The Print and Apply Sensors are connected to Cimjet 300 via the 9 pin D type connector **X23** on the rear of the machine.

For full connection details refer to the Technical Guide and Electrical Schematics sections of the Cimjet 300 Dispenser manual.

Depending upon the installation, different wiring configurations can be used.

- In **simple applications** with only Print and Apply Sensors, wire the sensors directly to **X23**.
- In **more complex applications** with a number of connections to X23, it is recommended that a single multi-core cable be run in conduit to a junction box. The junction box can then be mounted at a convenient position and individual cables run to the sensors and conveyor control etc.

2.4.2 Fitting the Sensors

When the optimum position of the sensors on the conveyor is determined:

- Mount the sensor firmly in place and then mount the sensor reflector directly opposite.
- All print and apply sensors are “Dark energised” and should be adjusted accordingly.

2.4.3 Testing the Sensors

Viewing the status of the inputs in the Engineer Mode Diagnostic screen will test the functionality of the sensors. Take the Cimjet out of Auto Mode; depress the Engineer Mode button then the Display I/O button. The status of the inputs can then be seen. Passing an object between the sensor and reflector should cause the status to change from **OFF** to **ON**.

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2.5 Positioning Print and Apply Sensors

Depending on the mode of operation, set via the Restricted Parameters menu, the Cimjet 331 can use a combination of Print sensor only, Apply sensor only or both Print sensor and Apply sensor.

The sensors must be positioned correctly to obtain the best possible results. Different considerations are required for different operation modes

2.5.1 Auto Apply Mode

In this mode only the Print sensor is used and the label is applied automatically after the Apply delay timer has elapsed.

The Print sensor should be positioned far enough away from the Cimjet applicator (up stream) to allow enough time for the label to be printed.

To achieve this set the Apply Delay timer to zero and position the sensor so that the label is firmly and fully applied to the pack as early on as possible. Make sure it is applied as close as possible to the nearest edge. Use the Apply Delay timer to fine-tune the label's position on the pack.

Note: If the conveyor speed varies, the label position may differ from pack to pack and in extreme cases may even miss the pack completely. This can be avoided by using **On Demand** mode, which requires both Print and Apply sensors.

2.5.2 On Demand Mode

In On Demand Mode, a Print Sensor triggers the printing of the label and an Apply sensor the application of the label.

When the Apply Sensor is triggered, Cimjet waits for the Apply delay timer to elapse and then blows the label onto the pack.

The Apply Sensor position and the Apply Delay parameter setting determine the position of the label on the pack.

Consequently:

- The **product's** pitch and speed, and the speed of **printing** determine the position of the **Print sensor**.
- The Print sensor must be mounted far enough away from the Cimjet applicator (up stream) to allow a label to be printed before the product reaches the applicator. If this distance is greater than a product pitch then steps must be taken to increase the print speed or increase the product pitch.
- The Apply sensor should be mounted as **close to the applicator as possible**. This sensor triggers the application of the printed label onto the pack and the location of this sensor will set the position of the label on the pack.

A user parameter (Apply Delay) may be used to delay the application of the label but the zero delay label position is set by the sensor position.

2.5.3 Pre-print Mode

In Pre-print mode, the label is automatically pre-printed and held on the applicator vacuum pad, ready for application to the product.

When the Apply sensor is triggered Cimjet waits for the Apply Delay timer to elapse and then blows the label onto the pack.

The next label is then immediately printed and held on the Vacuum pad.

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2.6 Calculating sensor position

The following example provides guidelines for calculating the required position of the print and apply sensors (with label positioned early on the pack).

If the Cimjet is not printing the same data for each label, the additional label imaging time must also be taken into account.

Conveyor Speed	15m/min
Label Height	50mm
Print Speed	150mm/s
Application Time	0.05s (Time for Blow)

Print and Apply Time	=	Print Time	+	Application Time
	=	Label Height/ Print Speed	+	Blow Time
	=	50/150	+	0.05
	=	0.39 seconds		

Distance between Print and Apply sensors (l)	=	Conveyor Speed	x	Print and Apply Time
	=	15/60	x	0.39
	=	0.097 m		

2.7 Machine speed

The maximum product rate is determined by the overall cycle time.

To calculate the theoretical maximum throughput, where there is no delay between the end of printing and the apply sensor being triggered, use the following calculation:

Cycle time =

Apply Delay + Print Time + Blow Time

If the label is not the same for each product then the imaging time of the printer will add to the cycle time.

Example:

Using the same figures as we used in the sensor placement example and assuming a blow time of 50ms the total cycle time will be:

Cycle Time =

$$0 + 50/150 + 0.05 = \mathbf{0.38}$$

The maximum throughput is, therefore:

$$60/0.38 = \mathbf{157 \text{ cycles per minute.}}$$

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2.8 331 Blow Pipe Configuration

This Section describes how to configure the Cimjet 331 for the selected label.

Note: When you have successfully set up the Cimjet 331 for the selected label, make a record of the pipe configuration and parameter values on one of the sheets at the back of this guide.

2.8.1 Configuration sequence

To configure Cimjet 331 to correctly apply labels onto products:

1. Load labels using the standard procedures, including setting the Gap Label Optic.
2. Set the pipe configuration for the selected label.
3. Check labels are dispensed from the beak and arrive correctly on the applicator grill.
4. Check labels are blown evenly from the applicator grill onto the product.

2.8.2 Setting pipe configuration

To set the pipe configuration:

1. Open the cover by releasing the catch.
2. Refer to the suggested pipe configurations in Section 2.13. If the required label size is not covered in Section 2.13, follow the general guidelines in Section 5.
3. Gently pull out the necessary pipes from the holes in the grid on the front panel and push them into the suggested holes.
4. Carefully close the cover.

2.8.3 Checking correct position of label on grill

The label must correctly leave the beak and be held on the grill ready to be applied to the product.

Note: It is recommended that you print and apply at least 20 labels to ensure the label is consistently leaving the beak in the correct manner. To check this, use the CYCLE function in Restricted Mode to quickly print and apply labels.

To ensure that the label is correctly leaving the beak, you may need to adjust printer parameters **Feed Adjust**.

In addition, the blow pipe pressure effects how the label leaves the beak:

2.8.4 Air Assist Blow Pipe Adjustment

1. Ensure that the blow holes on the blow pipe are angled towards the beak.
2. Turn the blow pipe restrictor (at the back of the blow pipe) to 0 - no air pressure.
3. Gently increase the pressure until labels are consistently leaving the beak.

If the blow pipe pressure is set too high the label is blown from the beak rather than peeled off the beak. This causes incorrect positioning of the label on the grill.

2.8.5 Checking correct blow of label onto product

Label must blow straight across from the grill onto the product:

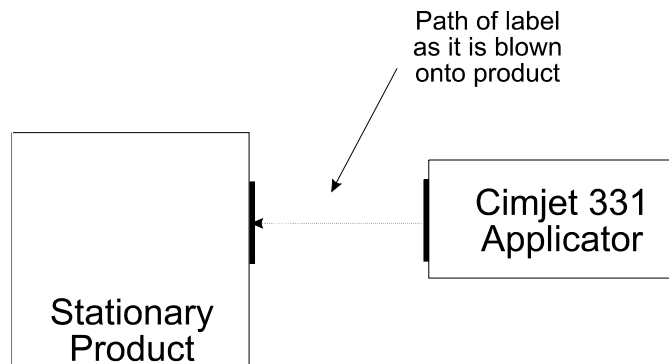


Figure 2–3: Ideal position of label arriving on product - side view

1. Position a stationary product no further than 50mm away from the grill. If possible, use the same type of product as you intend to label.
2. Print and apply a label. Carefully watch the “flight” path of the label. If the label path is not even and is not arriving straight at the product, follow these guidelines:
3. It is recommended that you print and apply at least 20 labels to ensure the label is consistently applied to the product - use the CYCLE function in Restricted Mode to quickly print and apply labels.

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If the label is not blown evenly over its area.

For example a corner is lagging:

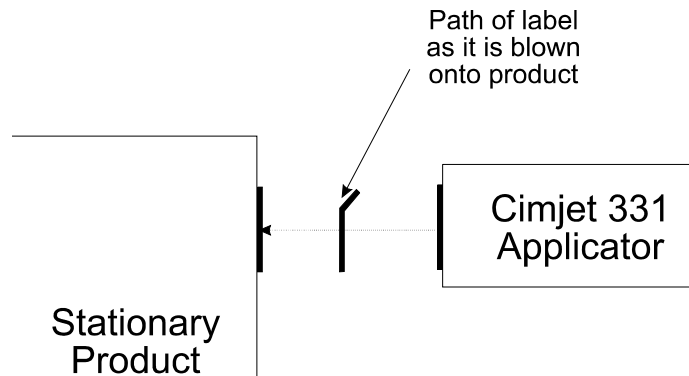


Figure 2-4: Path of label is not even, corner lagging - side view

Adjust the pipe configuration so there are more pipes in the area that is lagging.

If the label arrives to one side of the product:

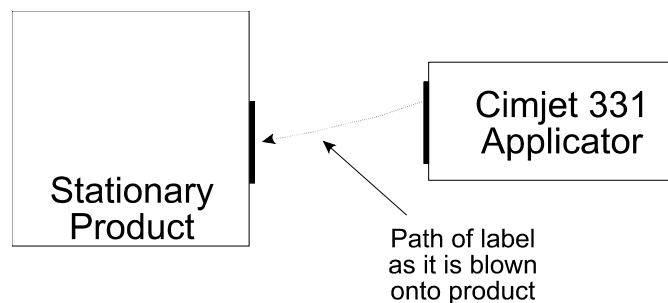


Figure 2-5: Label arriving to one side - top view

Adjust the pipe configuration so that there are more pipes on **that** side - if the label is arriving to the right, move some pipes to the right, if the label is arriving to the left, move some pipes to the left.

If the label arrives too high on the product:

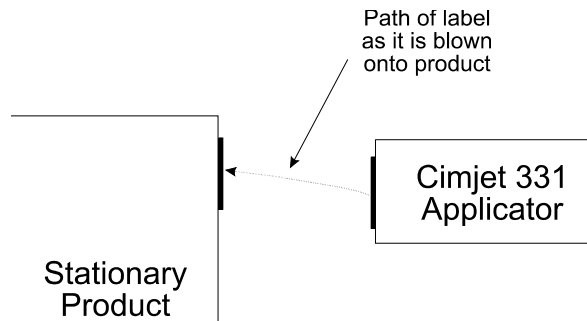


Figure 2-6: Label arriving too high - side view

Adjust the pipe configuration so that there are more pipes to the top of the pipe configuration.

If the label arrives too low on the product:

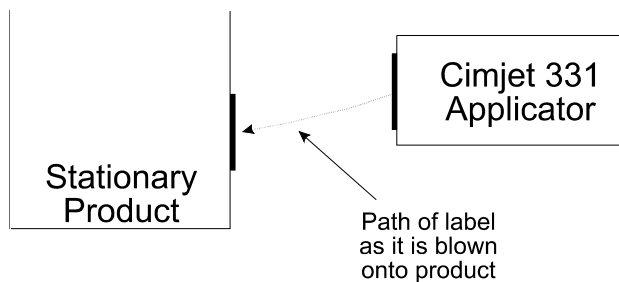


Figure 2-7: Label arriving too low - side view

Adjust the pipe configuration so that there are more pipes to the lower part of the pipe configuration.

To obtain a consistent, repeatable label position, it may be necessary to increase the Air Pressure and Blow Time Parameter. However, when a satisfactory setting is achieved, further accuracy can often be achieved by slightly reducing these values.

When labels are consistently arriving at the correct position on the product, test the configuration by labelling products in a full working environment, using a moving conveyor.

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2.9 Considerations for small labels

For small labels, particularly long thin labels (wide edge leading) adjustments to the pipe configuration may not be fine enough to obtain the required label position on the product.

For example, initially the label may arrive on the product too low. With thin labels, moving some pipes lower on the configuration may overcompensate and the label may then arrive too high on the product. In these cases, physically adjust the angle of the applicator to the product using the adjustment bolts, shown in Figure 2-2.

To adjust the angle of the applicator:

1. Loosen the adjustment bolts.
2. Slightly adjust the tilt of the applicator.
3. Tighten the adjustment bolts.
4. Re-test the pipe configuration and adjust as necessary.

2.9.1 Considerations for large labels

For large labels it may sometimes be necessary to move the applicator further away from the beak as shown in Figure 2-6.

Note: Only make this adjustment if the configuration steps in this Section fail to produce good repeatable results.

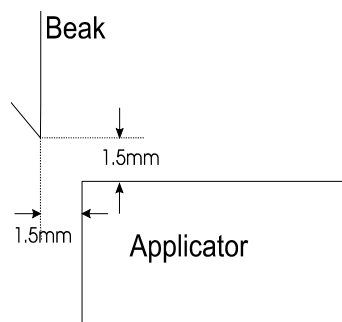


Figure 2-8: Applicator position relative to beak (large labels)

To adjust the position of the applicator:

1. Loosen the adjustment bolts, shown in Figure 2-2.
2. Move the applicator away from the dispenser.
3. Tighten the adjustment bolts.

2.10 Pipe Configuration Guidelines

This Section provides:

- General guidelines to determine the pipe configuration for any selected label.
- Suggested pipe configurations for a variety of labels which have been tested by MARKEM.

These should be used as guidelines only and slight adjustments may be necessary, as described in Section 5.

2.11 General guidelines

Use these guidelines to determine the pipe configuration for a selected label:

Measure the label.

If a pipe configuration is provided in Section 2-13 for the selected label:

Use the suggested pipe configuration as a starting point and proceed as described in Section 5.

If a pipe configuration is NOT provided in Section 2.13 for the selected label:

Determine which holes on the grid will be used to blow the label onto the product.

Ensure that the pressure is spread over the whole label area by distributing the pipes evenly over the required holes.

Note: If the label is small and does not require all 16 pipes, place the surplus pipes in holes as far away as possible from the label. Ensure all pipes are pushed into holes in the grid - DO NOT leave any pipes loose within the applicator.

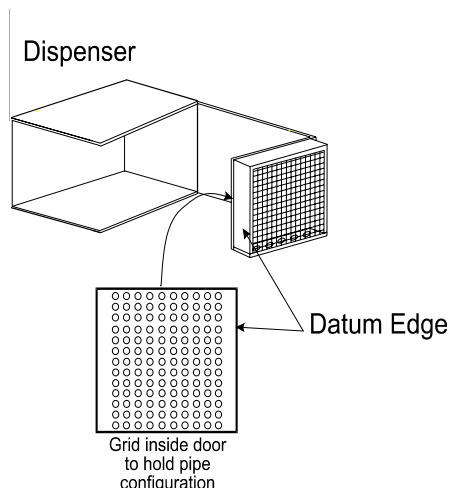
- The front diffuser helps to distribute the air more evenly over the label. Consequently it is not usually necessary to put pipes in adjacent holes.
- The same type and size of label from different manufacturers may behave differently. When you have determined the configuration for the selected label type and size, you may need to make further adjustments for labels from a different manufacturer. See *Section 2.9*.
- If you are using labels of the same size but different types of material, you can usually use the same pipe configuration, but the parameters may need to change. For example in Section 2.13.6, a 100mm x 100mm paper label is used and in Section 2.13.7. a 100mm x 100mm plastic label is used - the pipe configuration is identical but the Blow Time and Air Pressure are different.
- It is important to consider the datum edge when configuring the required pipe configurations, otherwise you may set-up a mirror-image of the required configuration.

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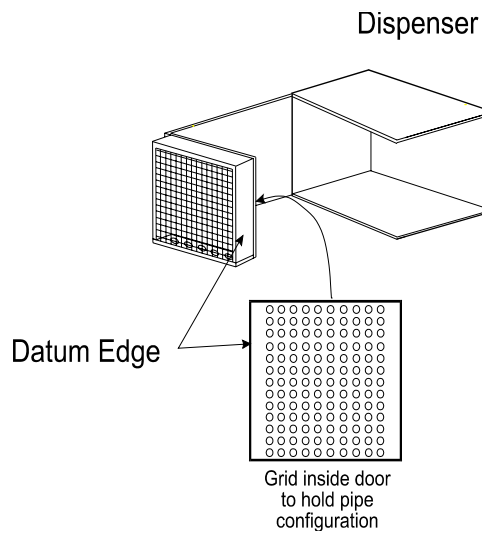
2.12 About the datum edge

The Datum Edge is the side of the applicator nearest to the base plate on the Cimjet. All labels line up against the datum edge:

For a Left Hand Cimjet 331, the datum edge is:

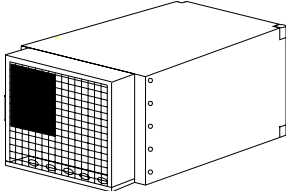
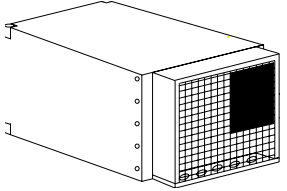
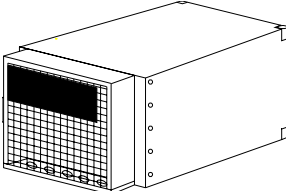
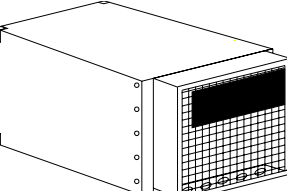
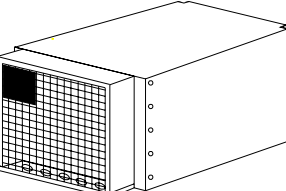
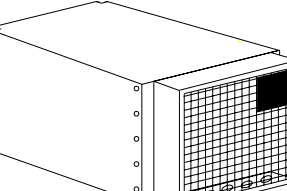


For a Right Hand Cimjet 331, the datum edge is:



These examples show how the datum edge effects the position of the label on the grill - and consequently the required pipe configurations. A right hand Cimjet requires a mirror-image configuration to a left hand Cimjet:

Table 2– 2: Datum Edge

	Left Hand Cimjet	Right Hand Cimjet	
D A T U M			D A T U M
E D G E			E D G E
I S			I S
T H I S			T H I S
S I D E			S I D E

SECTION 2 - INSTALLATION

2.13 Suggested pipe configurations

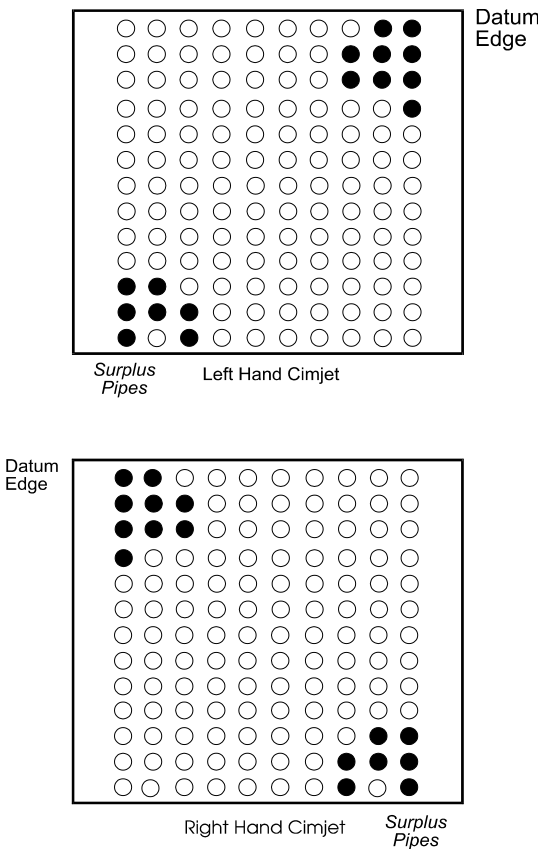
This Section provides suggested pipe configurations for a number of labels which have been tested by MARKEM.

If the required label is shown here, use the pipe configuration as a starting point - you may need to make some adjustments as described in Section 3.9.

The pipe configurations are shown for both Left Handed and Right Handed Cimjets : the datum edge is indicated on the drawings.

All labels were tested with the product 50mm from the applicator grill. A Settling Time of 100ms was used.

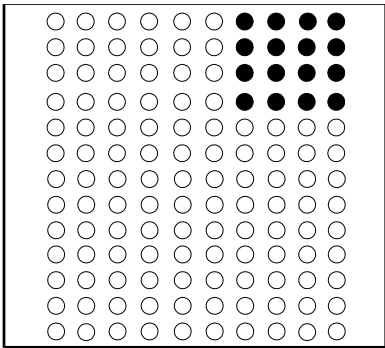
2.13.1 Paper label : 28mm x 28mm Pipe Configuration



Parameters	Suggested Setting
Blow Time	30ms
Air Pressure	5.5 Bar

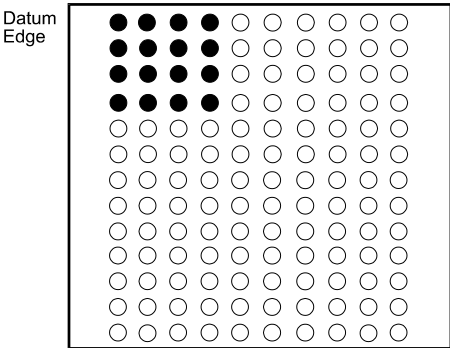
Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

2.13.2 Paper label : 35mm x 35mm
Pipe Configuration



Datum
Edge

Left Hand Cimjet



Datum
Edge

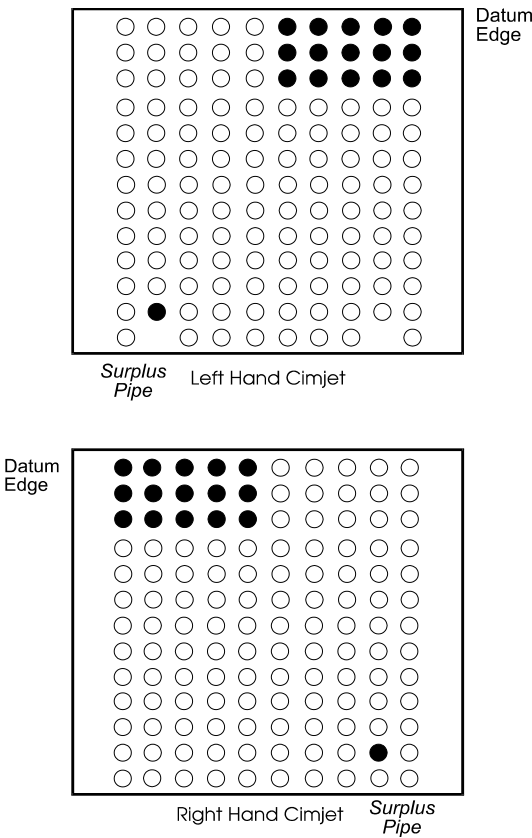
Right Hand Cimjet

Parameters		Suggested Setting
Blow Time	10ms	
Air Pressure	3.5 Bar	

Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

SECTION 2 - INSTALLATION

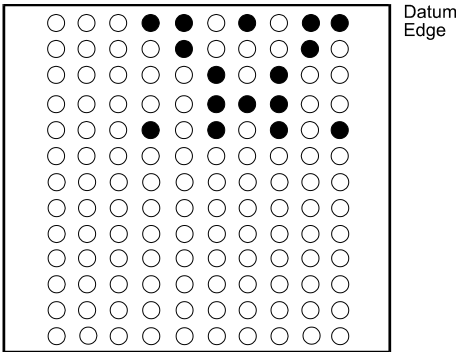
2.13.3 Paper label : 50mm x 25mm
Pipe Configuration



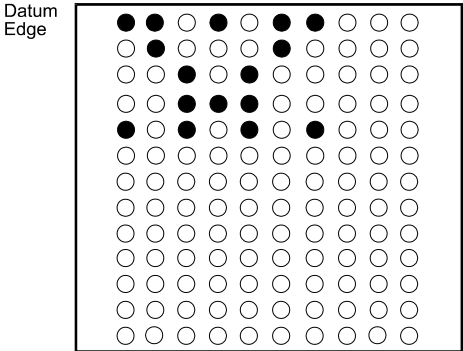
Parameters	Suggested Setting
Blow Time	20ms
Air Pressure	4.5 Bar

Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

2.13.4 Paper label : 70mm x 47mm
Pipe Configuration



Left Hand Cimjet



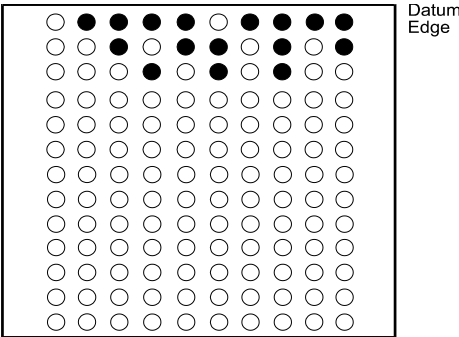
Right Hand Cimjet

Parameters		Suggested Setting
Blow Time		60ms
Air Pressure		4.25 Bar

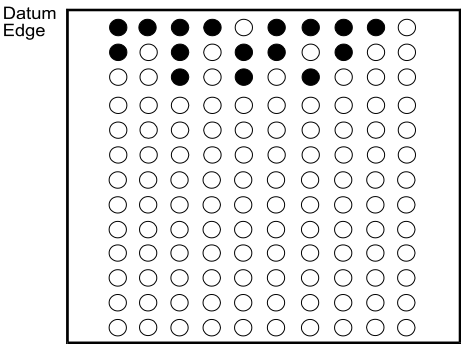
Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

SECTION 2 - INSTALLATION

2.13.5 Paper label : 90mm x 25mm
Pipe Configuration



Left Hand Cimjet

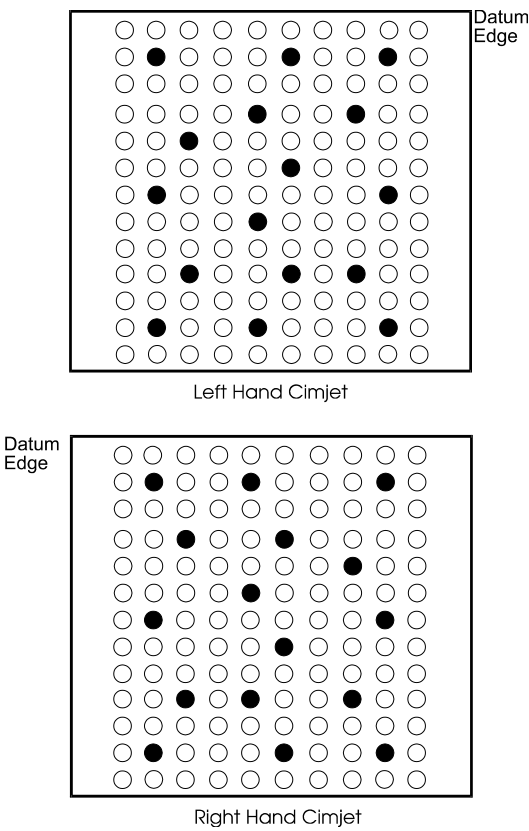


Right Hand Cimjet

Parameters		Suggested Setting	
Blow Time		45ms	
Air Pressure		5.5 Bar	

Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

2.13.6 Paper label : 100mm x 100mm
Pipe Configuration

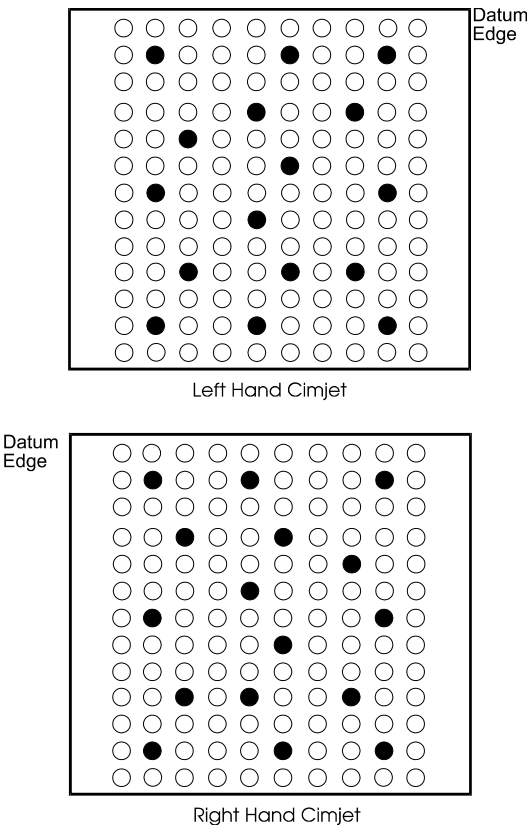


Parameters		Suggested Setting
Blow Time	100ms	
Air Pressure	5.5 Bar	

Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

SECTION 2 - INSTALLATION

2.13.7 Plastic label : 100mm x 100mm
Pipe Configuration



Parameters	Suggested Setting
Blow Time	60ms
Air Pressure	5 Bar

Use this pipe configuration as a starting point - you may need to make some adjustments as described in Section 5.

SECTION 3

APPLICATOR PARAMETERS

3 Applicator Parameters

The Cimjet 300 User Guides describe the general method of setting user and restricted mode parameters. This Section provides details of the additional applicator specific parameters.

- In Restricted Access Mode:
- Press **RESTRICTED SETUP**
- Press **SET PARAMETERS**
- Press **MACHINE OPTIONS**
- Press **APPLICATOR**

The additional 331 applicator parameters are:

Table 3– 1: Cimjet 331 Parameters

Parameter	Description
Operation Mode Range : Auto Apply, On Demand, Pre-Print Default : On Demand	Selects between Auto Apply, Pre-print and On-demand mode. These modes are described in Section 2.
Settling Time Range : 0 to 2000ms Default : 0	This parameter is used to allow the label to settle to the applicator grill before the label is applied to the product.
Blow Time Range : 0 to 2000ms Default : 0	Sets the duration of the blow used to apply the label. This should be kept as short as possible while maintaining reliable label application. It is recommended that the Blow Time is on for the time it takes the label to blow from the grill to the product.
Apply Delay Range : 0 to 2000ms Default : 100ms	This parameter allows the application of the label onto the pack to be delayed. Try not to use long apply delays as this adds to the overall machine cycle time and reduces the throughput Cimjet can deal with.

SECTION 3 - APPLICATOR PARAMETERS

SECTION 4

MAINTENANCE

4 Maintenance

4.1 General Lubrication and Cleaning

The design of the Cimjet 331 applicator eliminates the use of parts which are subject to wear, offering a longer product life. However to maximise performance, periodically check the following items:

4.2 Cleaning applicator grill

Label adhesive tends to leak out from under the labels and can be transferred onto the face of the labels. This adhesive can then build up on the applicator grill. If left this can cause labels to stick to the grill as they are fed. Clean the applicator grill, using Isopropanol whenever the printhead is cleaned.

4.3 Checking applicator fan

When cleaning the printhead and applicator grill, check that the fan is holding labels on the grill well.

Check that the holes in the applicator grill are not blocked and that the fan outlet is not blocked. In particularly dusty environments dust can build up inside the applicator and cause problems.

4.4 Checking air pipes in the pipe configuration

When cleaning the printhead and applicator grill, check the pipe configuration for leaks or kinked pipes and rectify any faults.

4.5 Checking filter regulator

Check the level of water in the filter regulator water trap and empty it if the level is approaching the filter section. Ensure that the regulator is set to the required pressure for the selected label.

4.6 Checking blow pipe

The blow pipe on the Cimjet300 dispenser supplies an air jet which ensures that the label is securely dispensed onto the applicator grill. This can be controlled via the BLOW PIPE parameter from the DISP I/O menu. A restrictor is fitted to the blow pipe which controls the volume of air used. The restrictor should be set to the minimum setting which keeps the label in contact with the grill. This function should be checked with the worst case air supply conditions to ensure reliable operation.

SECTION 4 - MAINTENANCE

SECTION 5

TROUBLESHOOTING

5 Troubleshooting

This section is designed to assist with diagnosing problems with the 331Applicator. For details on Dispenser problems please refer to the Dispenser Manual Troubleshooting Guide.

5.1 Diagnostic Screen

The Engineer Mode Diagnostic screen can be used to see the status of the Cimjet Inputs or to activate the Cimjet Outputs.

The full range of I/O can be found in the Cimjet 300 operating manual. The relevant I/O listed here refers to the 331applicator only.

5.1.1 Inputs

Table 5– 1: Applicator Inputs

Input	Status	LED	Connection
Print/Appy Sensor	On/Off	LD1	X23
Apply Sensor	On/Off	LD2	X23

5.1.2 Outputs

Table 5– 2: Applicator Outputs

Output	Status	LED	Connection
Vacuum Fan	On/Off	LD17	X14
Blow Pipe Soenoid	On/Off	LD16	X18
Blow	On/Off	LD15	X20

SECTION 5 - TROUBLESHOOTING

5.2 Application problems

5.2.1 Labels not printed

If labels are not printed and dispensed onto the applicator, check the following:

- Is print sensor operating correctly?
- If Operation mode is set to On-Demand a print sensor may be used to trigger printing of the label. Use the DISP I/O menu to check the operation of the print sensor.
- If the sensor is not working correctly check the adjustment on the sensor and, if a retro-reflective sensor is used, check the alignment with the reflector.

5.2.2 Labels dropping from applicator grill

If labels are printed but are falling off the applicator grill, check the following:

- Is fan working correctly?
- If the fan is not working correctly, check the operation of the FAN using the DISP I/O screen.
- Check for blocked holes in the applicator grill or a clogged fan. If necessary clean the grill and fan.
- If the problem persists replace the fan or the applicator grill.
- Are labels feeding correctly from beak?
- If the fan and grill are OK, but the labels are not sticking to the grill check the label stopping position. If labels are not being fed completely off the beak, check:
- Angle of the holes in the blow pipe. These should be angled towards the beak.
- Blow pipe pressure (adjusted by the restrictor at the back of the blow pipe) - this may not be sufficient to blow the remaining label off the beak.
- Ensure the beak is clean. If dirty, labels may not peel correctly.
- Label slip. This can be caused by dirty drive nip rollers, etc.
- Mechanical label stop position adjustment.
- Also, ensure beak and gap optic distances are correct.

5.2.3 Labels not applied correctly

If labels are correctly held on the grill, but are not blowing correctly onto the product, check:

- Apply sensor operation
- An apply sensor may be used to trigger application of the label. Use the DISP I/O menu to check the operation of the apply sensor.
- If the sensor is not working correctly check the adjustment on the sensor and, if a retro-reflective sensor is used, check the alignment with the reflector.
- Air pressure
- Is this set sufficiently to blow the label? Check air pressure and adjust if necessary.
- Settling time parameter
- Has the label settled on the grill before being blown? Check parameter and adjust if necessary.
- Blow time parameter
- Is the label blown for sufficient time to reach the label? It is recommended that the Blow Time parameter is set for the length of time it takes the label to reach the product. Check parameter and adjust if necessary.
- Pipe configuration
- Is the pipe configuration correct for the selected label?
See Section 3.
- Is the pipe configuration set correctly for the hand of the Cimjet? Right handed and left handed Cimjets require different configurations relative to the datum edge. *See Section 3.*
- Are all pipes within the applicator in place? Ensure all pipes are securely pushed in position.

5.2.4 Inaccurate label placement

In certain circumstances the horizontal placement of labels onto your packs may vary.

Possible causes of variations in label position along the product are:

- Pipe configuration is not appropriate for the selected label. *See Section 3.*
- Incorrectly set parameters. *See Section 4.*
- Check the quality of the product detection sensor signal. Ensure that the apply signal is repeatable and accurate.
- Variations in the conveyor speed may cause variations in label position.
- Products are too close such that the print/apply cycle takes longer than the time between packs. In extreme cases packs may go through unlabelled. Either increase the gap between the products or increase the print speed.
- Insufficient pressure is being applied to ensure accurate labelling. Position the Cimjet nearer to the product or increase air pressure.
- Variations in the distance to the product will cause variation in the labelling position. Ensure good pack control - see Technical Specification.

5.3 Customer-Specific Pipe Configurations

Customer Label

Type: Label Size:

Pipe Configuration

Tick which side is the datum edge:

The diagram shows a 10x10 grid of circles. To the left of the grid, the text "Right Hand Cimjet" is written vertically. To the right of the grid, the text "Left Hand Cimjet" is written vertically. Above the grid, the text "Datum Edge" is written, followed by a small square icon. Below the grid, the text "Datum Edge" is written, followed by a small square icon.

Parameter	Value
Blow Time	
Blow Distance (Distance of Product from Grill)	
Settling Time	
Air Pressure	

SECTION 5 - TROUBLESHOOTING

Customer Label

Type:

Label Size:

Pipe Configuration

Tick which side is the datum edge:

The diagram shows a 10x10 grid of circles. To the left of the grid, the text "Right Hand Cimjet" is written vertically. To the right of the grid, the text "Left Hand Cimjet" is written vertically. Above the grid, the text "Datum Edge" is written, followed by a small square icon. Below the grid, the text "Datum Edge" is written, followed by a small square icon.

Parameter	Value
Blow Time	
Blow Distance (Distance of Product from Grill)	
Settling Time	
Air Pressure	

SECTION 5 - TROUBLESHOOTING

Customer Label

Type:

Label Size:

Pipe Configuration

Tick which side is the datum edge:

The diagram shows a 10x10 grid of circles. To the left of the grid, the text "Right Hand Cimjet" is written vertically. To the right of the grid, the text "Left Hand Cimjet" is written vertically. Above the grid, the text "Datum Edge" is written, followed by a small square icon. Below the grid, the text "Datum Edge" is written, followed by a small square icon.

Parameter	Value
Blow Time	
Blow Distance <i>(Distance of Product from Grill)</i>	
Settling Time	
Air Pressure	

SECTION 5 - TROUBLESHOOTING

Customer Label

Type:

Label Size:

Pipe Configuration

Tick which side is the datum edge:

Diagram illustrating a 10x10 grid of circles (dots) arranged in a square pattern. The grid is labeled with "Datum Edge" at the top and bottom, and "Right Hand Cimjet" on the left and "Left Hand Cimjet" on the right. The circles are arranged in 10 rows and 10 columns, forming a square shape.

Parameter	Value
Blow Time	
Blow Distance <i>(Distance of Product from Grill)</i>	
Settling Time	
Air Pressure	

SECTION 6

RECOMMENDED SPARES

6 Recommended Spares

Table 6– 1: Cimjet 331 Applicator Spares Kit

Part No	Qty	Description
5824616	1	331 Applicator Spares Kit (including one Grill style and Fan)

Table 6– 2: Cimjet 331 Applicator Recommended Spares

Part No	Qty	Description
35414BA	1	Front Grill square holes
5952938	1	Front Grill 2mm round holes
5952939	1	Front Grill 4.8mm round holes
B04915AA	1	Fan

6.1 Optional Spares

Table 6– 3: Cimjet 331 Applicator Optional Spares

Part No	Qty	Description
B03190AA	1	Pneumatic Valve
B04947AA	1	Pneumatic Valve
35483BA	1	Blow Pipe Tube

SECTION 6 - RECOMMENDED SPARES
