Afinia Label DLP-2000 High Speed Mini Digital Label Press with Memjet Print Head

Instruction Manual

DLP-2000
DIGITAL LABEL PRESS

User Manual

Version 1.3

DLP-2000 Digital Label Press

Print, Laminate, Cut, Remove Matrix

The Afinia Label DLP-2000 is a digital label press that is powered by Memjet. The DLP-2000 prints in vibrant, 1600 DPI, photograph-quality color at 6 inches per second and requires no plates. The RotoMetrics cylinder accepts flexible dies up to 12 inches in length allowing for fast, accurate die cutting of any shape, including perforations. The DLP-2000 is compatible with your existing RotoMetrics dies.

The DLP-2000 can also convert stock to blank labels, ready for printing. With a 14-inch flexible die, it's possible to run the DLP-2000 in full rotary mode which will convert blank labels at a rate of over 140 ft./min.

The DLP-2000 Digital Label Press brings the incredible speed, quality and economical low cost-per-print of Memjet Technology together with the precision and performance of RotoMetrics magnetic cylinders and dies. Finally, labels can be printed, laminated and cut in-line.

Contents

Features

Automatic
Run with the Afinia L801 printer
Use as a stand-alone finishing unit

Reliable
Solid Industrial Design

Fast
Variable speed up to 8" per second

Easy to use
Simple setup and running procedures

Perfect Control
Clutches provide full web tension control

Accurate
Full rotary reciprocation provides perfect cutting precision

Wide Appeal
Suits industrial and bureau label converters

Range of Uses
Provides high durability for your printed labels with high gloss finish. Perfect for compliance labels

If you need to laminate and convert pre-printed continuous material, the Afinia DLP-2000 offers the complete solution.

It may be used as a stand-alone unit or in-line with the Afinia L801 printer. Simply print your continuous labels with a black registration mark and this remarkable machine makes laminating and die cutting look easy. The DLP-2000 uses a combination of an electronic mark sensor together with a printed circuit board, screen and keyboard to ensure an amazing +/- 0.3mm registration accuracy.

Die cutting is handled by our unique full rotary reciprocating head. This system uses a full rotary cutting action, with a geared reciprocating cylinder carriage. It uses economical flexible steel cutting plates, for very high precision and long die life.

The use of a high quality PCB for logic control ensures the DLP-2000 can be modified to suite most custom applications, such as bar code verification. When combined with optional slitting and sheeting attachments, the DLP-2000 is the complete solution to your laminating and die-cutting requirements.

Visit our website at www.afinialabel.com for detailed information and downloads.

Specifications

Print Speed:	30 ft/min.
Print Quality:	1600 DPI full-color output
Max. Web Width:	9.65″ (245 mm)
Max. Diecutting Width	9″ (230 mm)
Max. Diecutting Length	12″ (304.8 mm)
Cutting Dies	Flexible steel – any size from 0.2″ (5 mm) to 12″ (304.8 mm) repeat
Max. Laminate OD	11″ (280 mm)
Max. Finished Label Rewind	11″ (280 mm)
Max. Waste Matrix Rewind	11.8″ (300 mm)
Razor Slitter Assembly	6 knives
Razor Slitter Lateral Adjustment	0.47″ (12 mm)
Unwind	15.75″ (400 mm) max. outside diameter
Registration Sensor	Laser
Registration Sensor Adjustment	9″ (230 mm) x 12″ (304.8 mm)
Sensor Mark	0.2″ x 0.2″ (5 mm x 5 mm)
Lateral Paper Adjustment	0.5″ (12 mm)
Laminate	Economical, self-wound and supported laminate (on a liner). Liner removal included for use with high quality, liner-supported laminate
Core Sizes	3″ (76 mm)
Dimensions	65″ (1650 mm) x 41.33″ (1050 mm) x 33″ (840 mm)
Frame	0.4″ (10 mm) solid aluminum
Safety Sensors	Magnetic lid x 2
Loop	Photoelectric distance sensor
Power	110V – 240V adjustable, 7 Amps
Registration	+/-0.01″ (+/- 0.3mm)
Speed	Max 7.87″/sec (200 mm/sec) re-registering or 140 ft/min full rotary for blank labels
Speed Control	Variable
Weight	420 lbs (190 kg)
Motors	2, 400 W / 90 W
Control	PCB. Inverter, Encoder

Installation

Unpacking

> **Caution:** This machine is extremely heavy. Do not attempt to move the crate or machine without suitable lifting equipment. Failure to follow these instructions may result in serious back injury.

Once you are ready to uncrate your DLP-2000, you will first need to remove the top panel, followed by the 4 side panels, leaving the machine accessible for examination and detachment from the base panel.

View from underneath the crate

After removing the top and side panels, remove the 4 bolds holding the DLP to the base panel.   The DLP-2000 is supplied ready to use. Once you have removed the outer part of the crate, you will only need to position the machine with a forklift, where it is to be used and plug it in.

> **Caution:** Use a forklift to remove the DLP-2000 from its crate and to place your machine into its final working position. Do not carry the machine.

Adjusting Pinch Rollers

> The DLP-2000 is supplied with pre-set maximum roller settings. If the machine is supplied with no nip pressure, simply turn the adjustment knob down unit it stops. Do not use excessive force.

The DLP-2000 is fitted with silicone rubber nip rollers. Do not use a knife on these rollers and clean with a mild solvent if required.

PINCH ROLLER ADJUSTERS

The laminating roller pressure is set and should not need to be changed.
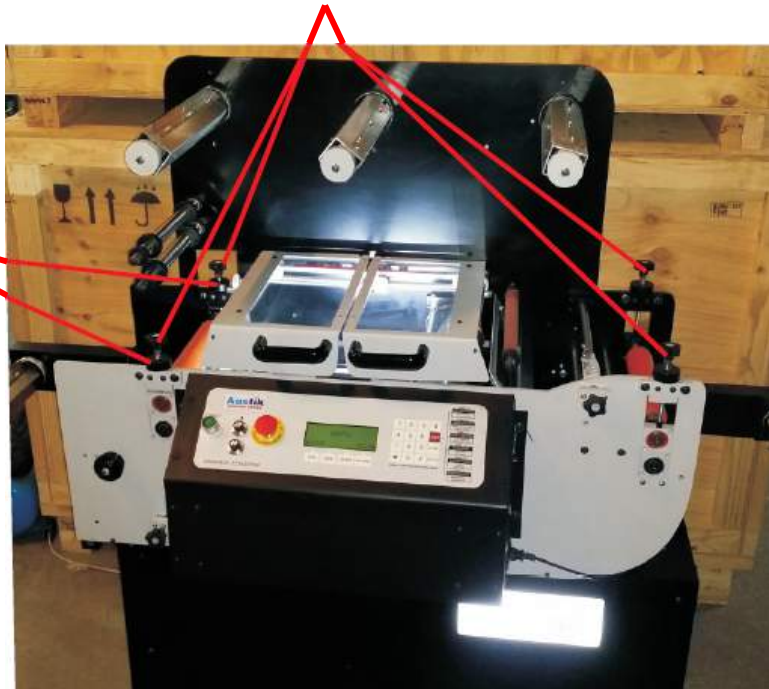
Wind the pressure adjusters down until they stop. Do not use excessive force.

Components

Identifying major components

Caution: Do not proceed until you have a good understanding of the major components of your machine and their locations. Do not attempt to start or run the DLP-2000 before reading the instructions detailed on the following pages.

LAMINATE UNWIND

MAGNETIC CYLINDER

REWIND MANDRELS

SLITTING KNIVES

ELECTRICAL CONTROL BOX

Safely Features

> Caution: The safety features included with your machine are for your protection. Never remove warning labels or disable cut out switches. Be aware of your emergency stop location and use common safety precautions and care at all times.

Following is an outline of the main safety features included with the DLP-2000. Please ensure that you are familiar with all of the safety features before proceeding.

- EMERGENCY STOP: Note the location of the emergency stop switch. The switch is designed to immediately stop the machine and apply the motor brakes. After a few seconds, the motor brakes are automatically released.
- ELECTRICAL CABINET: The cabinet is secured by 4 – 8mm bolts which should be kept tight at all times and removed by authorized technicians only.
- DRIVE BELT: Ensure that hands, hair or clothing do not overhang the machine and cannot be caught in the drive belt. These are inside the back cover and underneath the die cylinder.
- NIP ROLLERS: These rollers are driven by powerful motors. Never under any circumstances place fingers, hair or clothing near the nip rollers while the machine is running.
- WARNING LABELS: These labels indicate important safety considerations for your machine. Never remove, damage or obscure warning labels.
- DIE ACCESS LID: Never open the die access lid while the DLP is operating. The die access lid is protected by a safety switch. Never remove, disable or disconnect the switch and do not continue to operate the DLP with a defective switch. Always open and close the lid slowly and carefully using the handles provided ONLY.

Connecting power

Caution: Do not proceed until you have a good understanding of the major components of your machine and their locations. Do not attempt to start or run the DLP-2000 before reading the instructions detailed on the following pages.

Follow these steps listed to attach power.

- Locate the position of the power socket
- The DLP-2000 power socket is switchable and you must check that the correct voltage has been selected for your local power source. Note that the voltage indicator **1** will indicate either 110-120V or 220-240V. The text next to the voltage indicator arrow that points downwards is the current setting. If the voltage text is not correct you must contact your distributor immediately. DO NOT attempt to start the DLP-2000 with the wrong voltage selected.
- Attach a power cable to the DLP-2000 machine. Connect the cable plug to a standard protective earth electrical socket of the correct voltage. You will need a standard computer power cable with the correct power socket for your country
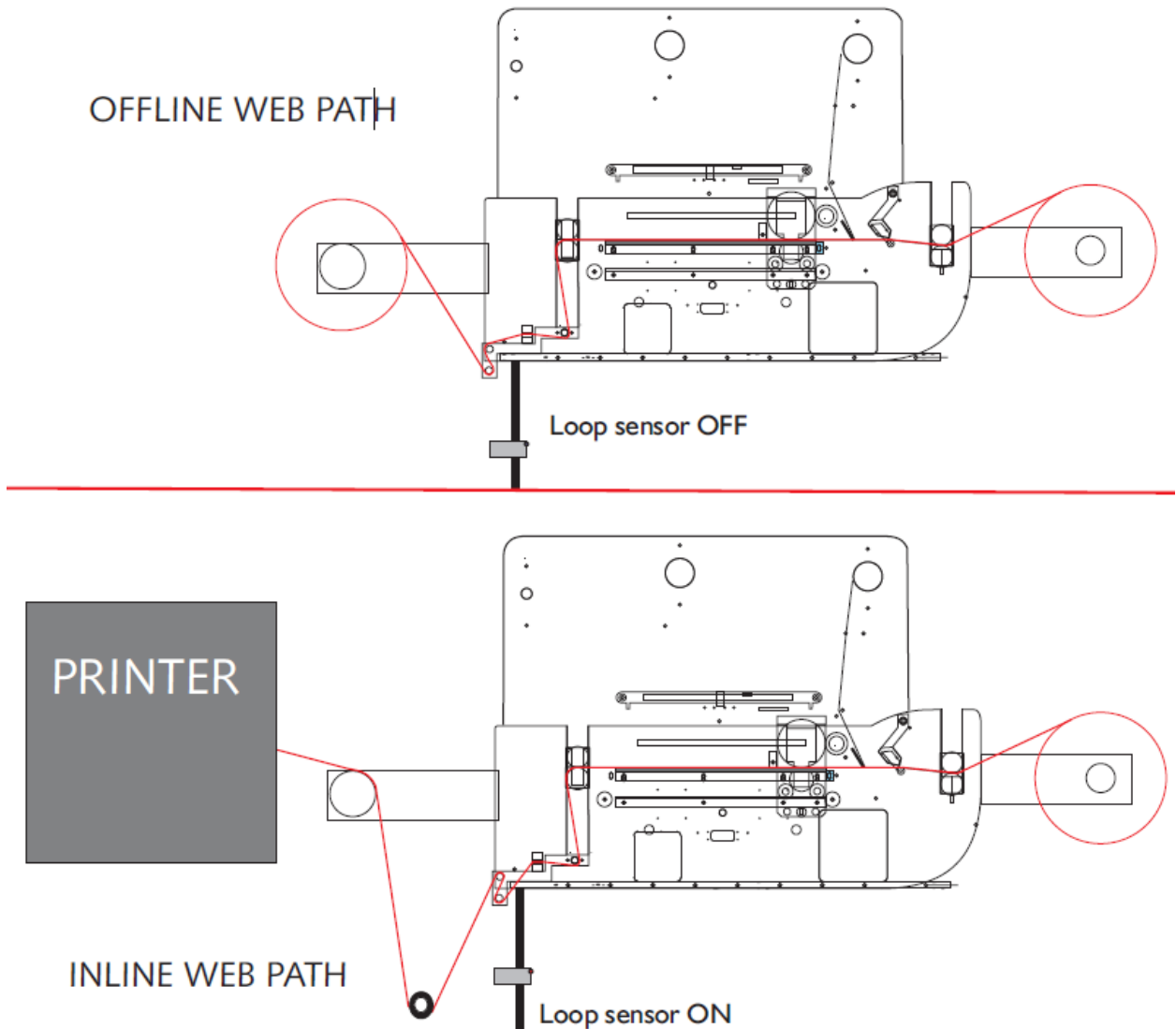

ELECTRICAL POWER
SOCKET

Downward pointing
arrow indicates
current voltage selected

Overview

Loading media

Caution: Ensure that the power is disconnected before you begin to load your media for the first time or until you have a good understanding of the general operating procedures.

OFFLINE WEB PATH

Loop sensor OFF

PRINTER

INLINE WEB PATH

Loop sensor ON

Printer media

Load the printer with the desired media.

Once though the printer, use the printer to either feed or print media until you have enough media to feed through the DLP-2000 convert as shown below.

To use the inline method of production, the printer must not have an automatic cut off or sheeting mechanism active when the printer is paused. To stop and start the converting process, the printer is in control of both sections of the machine. Simply pause or stop the printer to stop the unwind and the DLP-2000 converter.

It is also important that the speed of the printer not exceed the speed of the DLP-2000 converter or media will reach the floor. When the printer is slower than the converter, the converter will stop and start automatically, keeping the loops at a constant level.

PRINTER

INLINE WEB PATH
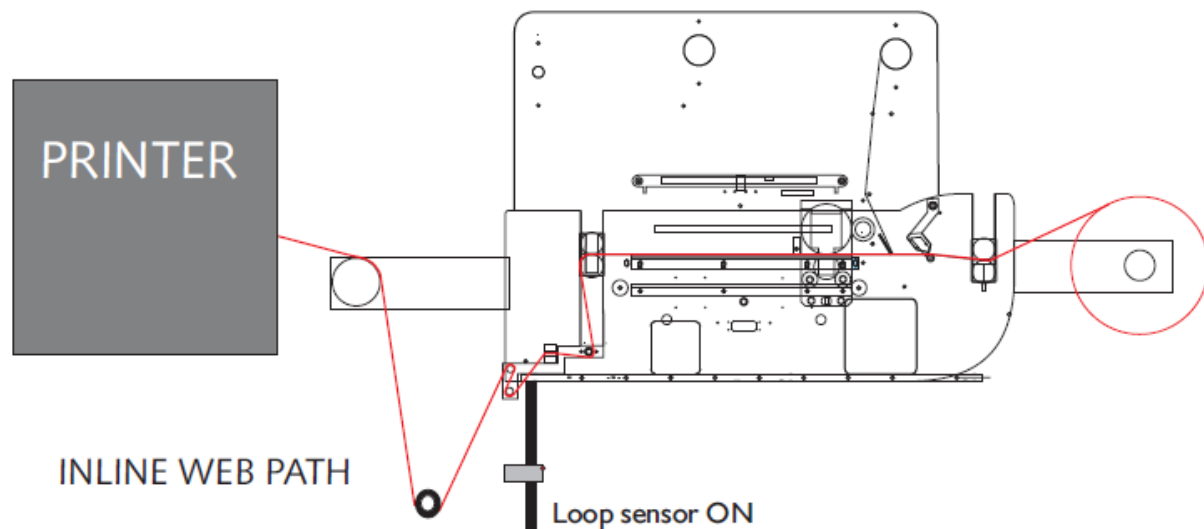
Loop sensor ON

Enable or disable the loop sensor

> If the need arises where the loop sensor needs to be turned off, use these instructions to enable or disable the DLP-2000 loop sensor.

- To access the menu to enable or disable the loop sensor, press the JUMP key, followed by the number 3 key
- Use the arrow key to scroll to the Loop Sensor setting. Disable the sensor by changing the loop sensor setting to 0 by entering 0 and pressing the Enter key
- Enable the sensor by changing the loop sensor setting to 1 by entering 1 and pressing the Enter key
- Press the HOME key to return to the front screen

Opening the die lids

Caution: Ensure that the printer is stopped before opening the die access lid. Close and open doors carefully, using the handles only.

Use these instructions to open and close the die access lids.

- Do not use the die access lids to top the machine. Use the STOP key or the EMERGENCY STOP button. If the die access lids are raised during the operation of the DLP-2000 the operator must press the Emergency Stop button and then the RESET button to re-home the cutting die. Failure to follow these instructions could result in a web break.
- When cleaning the die lids, use a window cleaning detergent only. The use of strong solvents or chemicals will destroy the transparency of the lids.
- The DLP-2000 lids can be opened partly or fully, depending on the access required. OPEN ONE LID AT A TIME USING THE HANDLES PROVIDED.
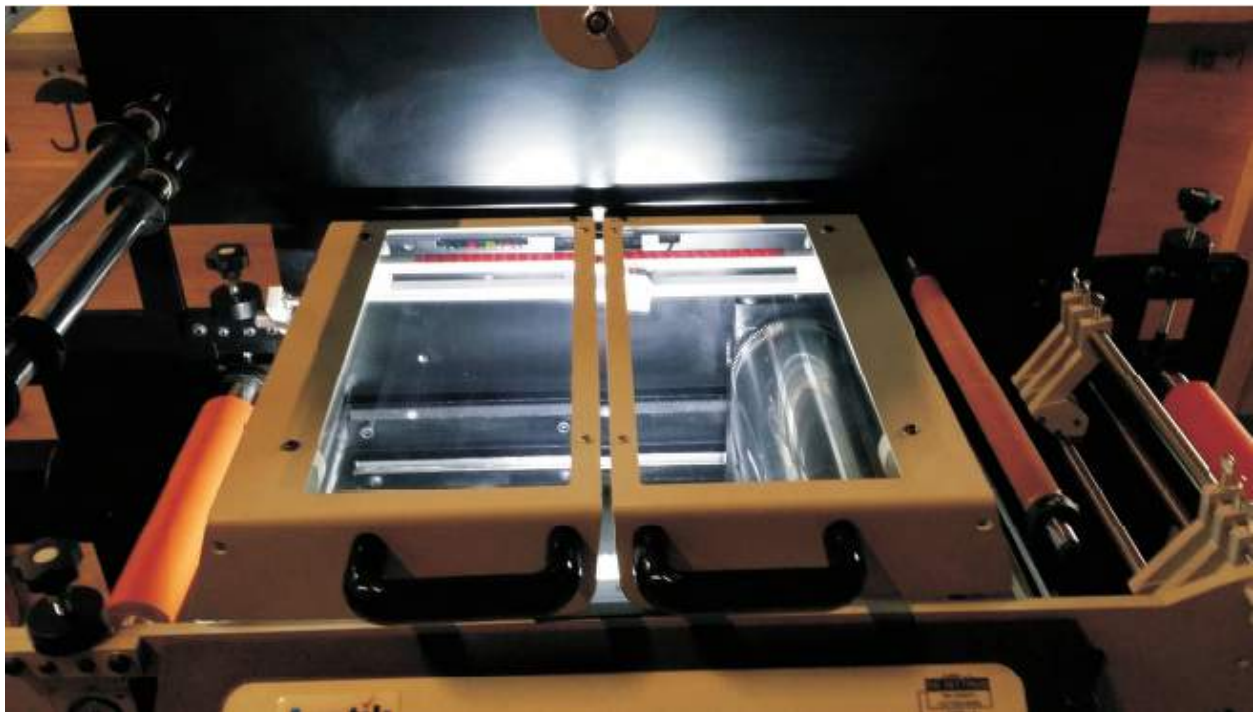
Using the splicing table

The splicing table enables the user to join rolls of media together neatly and correctly, to allow smooth passage through the die cutting, stripping and slitting processes. Follow the instructions below on the use of the DLP-2000 splicing table.

- When the current roll of media is finished, stop the DLP-2000 or the loop sensor will stop the machine when it sees no media. Push the Emergency Stop button.
- Load the new roll of media into the printer or unwind mandrel, making sure the new roll is in the same position as the previous roll. Enter the new roll of media into the splicing table and align it with the previous media.
- Lower and lock the top section of the splicing table. Using a sharp knife, cut through both pieces of media, in the slot on the splicing table.
- Using tape, join the underside of the new media to the underside of the previous roll, making sure to align them as perfectly as possible. Undo and lift the top section of the splicing table, remove the unwanted cut pieces of media and place another piece of tape across the top of the media at the join. If laminate is being applied, the top tape is not required.
- Using scissors or a sharp knife, cut the excess tape on each side of the media, as close to the media as possible. Release the Emergency stop and press the reset button. You are now ready to begin running a job.
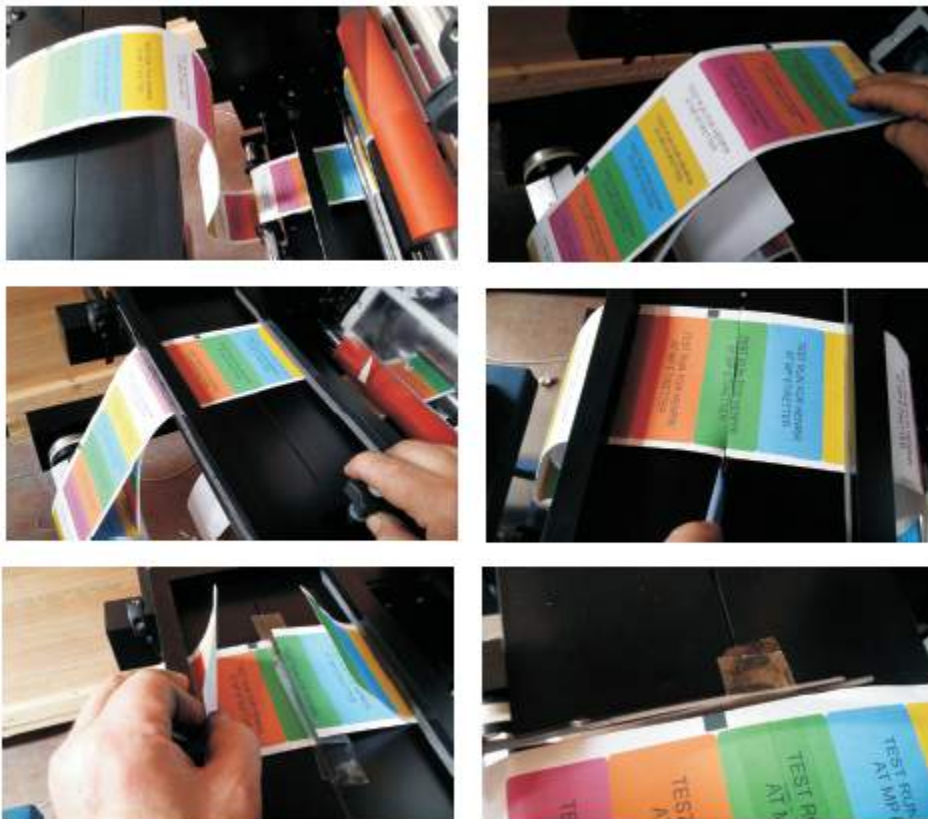
Adjusting media

The correct line of the paper is important to the lateral registration. Follow the instructions below as a guide to setting the line of paper up correctly to ensure a consistently straight web path.

Before beginning the following it is important to have the back plates of the DLP-2000 and the unwind lined up squarely with each other.

When loading the media onto the unwind mandrel it is recommended but not essential, to keep the paper to a constant position to the back of the machine. This allows for faster changes in web width as only the near side paper guides will need to be moved.
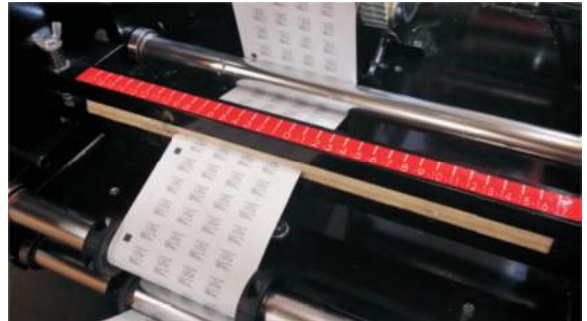
It is important to set the 2 lower paper guides first. After inching the paper for a few feet you can set the paper guides. Make sure that the guides are set against the media so as not to allow for any lateral movement.
 It is easier to nip the paper guides up only a little so
 that they can be moved by hand if required.
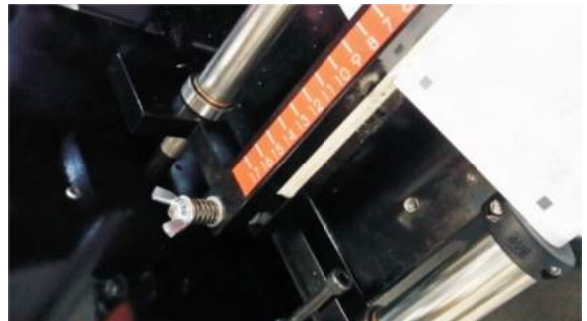
Once through the machine attach the media to a core on one of the rewind mandrels. If the job requires more than one roll to be rewound, take note of the position of the first roll on the mandrel ruler, as it winds up on the
 mandrel. This will make the repositioning of new cores easier.

Use the lateral web adjuster to move the web across the machine if needed. This can be done while the machine is running. Wait for a few impressions before moving it again to see how much movement you have made. Try to begin a job with this adjustment in the center of travel to insure movement in either direcions, if required.

Adjusting mark sensor position

The DLP-2000 machine is fitted with an amplified laser black mark sensor. It can be moved anywhere within the die cutting area however to reduce set up time for each job and minimize any settings, follow these instructions.

Adjust the sensor so that it points to the mark approximately in line with the zero line on the sensor ruler. The sensor is deliberately set on an angle to avoid excess reflection on glossy materials. When setting up your digital print, always place the black mark in the center of the image(s) to be cut.

The adjuster for along the web registration is used to advance or retard the print, in relation to the position of the cutting die. Anti-clockwise turning will advance the print towards the slitting end of the machine. If the above instructions are followed very little movement will be required for registration.

If the user keeps the paper guides at the back of the machine, in a constant fixed position, there will also be very little adjustment required for the sensor, across the web. If it is required, with the lids closed, hold both ends of the sensor bar and gently pull forward or push back to the required position, for lining up with the black mark. Gently lock the sensor bar position using the grub screws in both ends of the sensor bar.

Teaching the Mark Sensor

> Your mark sensor is sent already trained to read a black mark on white media. The follow instructions should be used if the sensor needs to be retrained for different media.

Before carrying out this procedure you should have the sensor already positioned to "see" the black mark on your media, as outlined on the previous page.

Inch the media forward until the laser is pointing directly onto the black mark. Set the small switch on the right to SET.

Once you have done this, press the orange button on the left once.

The display will flash and change to 2PntTch or something similar. Now inch the web a little so that the laser is pointing onto the media color only. Press the 3rd button once more and set the small switch from SET to RUN.

Test that you have taught the sensor correctly by inching the machine slowly past the next mark. The laser indicator should flash orange when it sees the black mark. This indicates that you have taught the sensor correctly.

Inch the machine until you are on the next black mark and you are ready to run.

The Encoder

Your machine is fitted with a 300 pulse per inch Omron Encoder. This device is what accurately measures the distance the paper has travelled. Its correct function is vital to the operation of your machines performance

The encoder is located underneath the front drive roller and is calibrated to the diameter of this roller for accurate distance sensing. Be aware of its location and importance. Without it your machine will not function properly.

ENCODER LOCATION
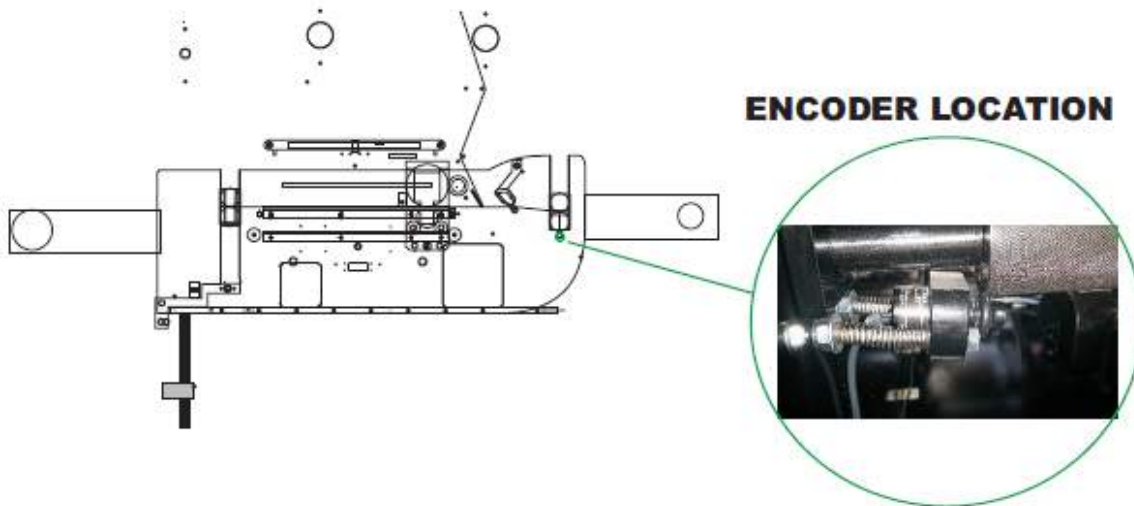
Jump + 4 will take you to the Encoder settings screens.

These all relate to distance settings in relation to your machines paper travel.

- Encoder indexing should always be set to 1
- Repeat is the distance from the center of one black mark to the next
- Sense is the distance before the black mark that the mark sensor will actually look for the mark.
- A 0 in this setting means you are running a blank label with the mark sensor disabled
- Encoder read is the distance your machine has travelled since the last black mark
- Encoder cal is the encoder calibration. NEVER ALTER THIS SETTING
- Encoder Mark is the ramp down distance setting as explained on page 33.

Running blank labels

Reciprocating Mode

Warning: The mark sense should only be disabled when running blank labels. You must enable the mark sense before your machine will recognize a registration mark or correctly register a die-cut.

- To run labels in reciprocating mode, the operator will need to disable the ability to sense a black mark. The pitch of the blank labels will then rely solely on the encoder. This method is not as accurate as reading a black mark so alternatively the user can print black marks at the desired label pitch and die cut the labels by registering the printed black mark. Try this if the non-black mark setting is not accurate enough.
- To access the menu to enable or disable the sensing of a black mark press Jump and 5.
- Setting any value in the SENSE option will enable the encoder for reading black marks. Setting this option to 0 will cause the system to not look for the black mark.

TO DISABLE THE MARK SENSOR


```
ENCODER  INDEXING    1
REPEAT  (mm)     110.0
SENSE   (mm)     000.0
0=BLANK LABEL     NEXT
```

TO ENABLE THE MARK SENSOR


```
ENCODER  INDEXING    1
REPEAT  (mm)     110.0
SENSE   (mm)     010.0
0=BLANK LABEL     NEXT
```

Full Rotary Mode

1 Depress the E Stop button and wait for the "click" When the brakes release roll the cylinder to the far left side	**2** Remove the Rotary Drive gear from its position on the front of the machine	**3** Attach the gear to the drive shaft making sure to tighten onto the flat spot of the shaft
4 Undo the 3 visible gear rack bolts on either side of the machine, half a turn only	**5** Roll the cylinder forward to allow you to do the same to the 2 remaining rack bolts	**6** Your gear racks are now loose
7 Push down on both of the gear racks. They will drop approximately 5mm, then they will stop.	**8** Now push the cylinder as far to the right as it will go, making sure you have meshed with the drive gear.	**9** Remove the Cylinder locks from their home on the front of the machine.
10 Attach them as shown, on both sides. There should now be no movement of the cylinder	**11** Remove the proximity cap from the front of the machine and screw very lightly to the far left proximity switch as shown.	**12** Do not tighten. The job of the cap is to prevent the cylinder from homing.
13 Make sure it is on the far left proximity sensor.	**14** Turn your speed down to very slow and use the feed button to attach your full wrap die as shown	**16** Use the cylinder centre line to make sure your die meets up squarely at the join.
17 Go to "JUMP I" and enter a value into the Rotary Mode setting. This setting is in metres.	**18** The above setting will mean that the machine will run for 50 metres, then stop until you hit start again.	**19** On low speed, feed your matrix waste up to the mandrel and test run your first roll. You are now in Rotary mode.

Removing Waste

Use these instructions to remove your media waste.

- Attached a cardboard core to the waste mandrel
- Break the waste in front of the stripping bar
- Turn the machine speed down to zero. Push Start and use the speed control to slowly run the machine and remove the matrix waste safely.
- While running slowly, lead the waste around the rollers and up to the core on the waste mandrel.
- Using the idle roller as shown below will keep the waste at a constant stripping angle, regardless of the size of the waste matrix roll.

Loading laminate

Caution: Never attempt to attach laminate while the machine is operating. Always turn the machine OFF until the laminate is past the Nip Rollers and you are well clear of the Nip Roller area.

Use these instructions to load and thread backed or un-backed laminate. If you are using un-backed laminate, the instructions relating to laminate backing waste material do not apply.

- With the machine STOPPED, attach a roll of laminate centered on the mandrel. Ensure that the width of your laminate is the same width as your media roll or less.
- Release the backing from the laminate so that your laminate is threaded as shown in step 1. Continue threading the laminate until you have enough waste to reach the laminate waste mandrel. Unbacked laminate will not require the laminate waste mandrel.
- Continue threading the laminate while winding the waste by hand until your laminate reaches the application point in front of the nip rollers. Attach the laminate neatly and squarely to your media. Locate your laminate guides on either side of the laminate. Your laminate should now be threaded as shown.
- Test run your machine as described on page 17 and ensure that the laminate tracks correctly through the machine. If necessary adjust your laminate roll, waste mandrel roll and laminate guides until both your media and laminate track correctly.

Figure 1 - Using linered laminate
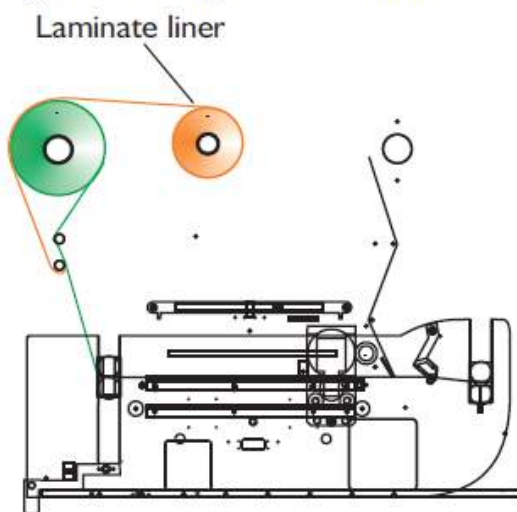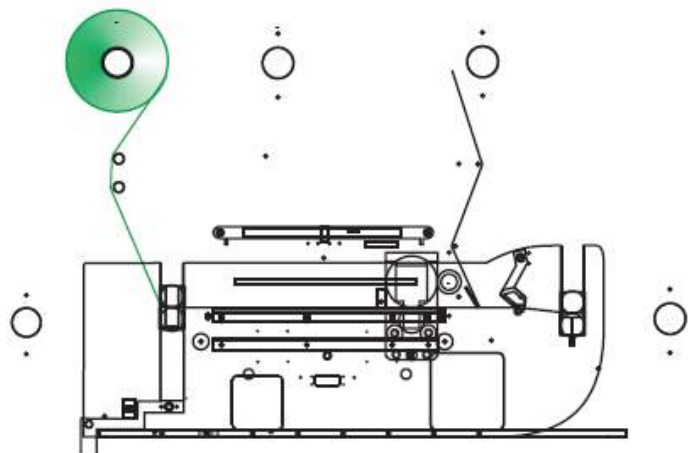Laminate liner

Figure 2 - Using self wound laminate

Laminate Adjustments

Tension adjustments are important when running lamination. Follow the instructions below to ensure that your laminate and media webs run in line consistently.

- Do not over tighten your laminate unwind clutch adjustment. Excess tension can cause the web to move and the labels to curl. There should be just enough tension to keep the laminate taught as it runs
- Make sure that your laminate liner rewind has less tension than the laminate unwind. Excess tension may cause the laminate to run loose and follow the liner
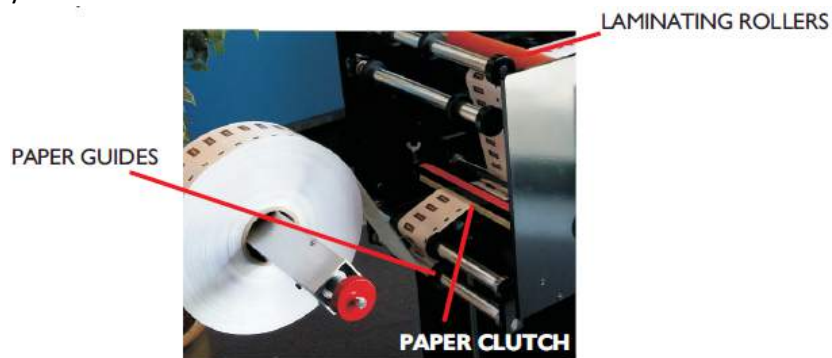
- Make sure the laminating rollers are adjusted down until they stop, using firm finger pressure
- The paper clutch must be used. It should create a firm tension on the printed media between the paper clutch and the laminating rollers. Without a good tension in this area the web may drift from side to side
- Insure that the paper guides are adjusted so that there is no room for the media to move from side to side. Your printed media roll should be straight and tight, to help avoid any web movement.

Attaching plates

Use these instructions to attach a cutting plate to your magnetic cylinder. The DLP-2000 has adjustments for moving the label in relation to the die so that your plate does not need to be in the exact position at this stage. Concentrate on getting the cutting plate square to the center line of the magnetic cylinder and as close as possible to the desired position across the web.

- Stop the machine and then depress the emergency stop fully to release the magnetic cylinder motor. Roll the cylinder to the left side of the machine with the square line of the cylinder in an easily accessible position.
- Leave the clear lids open.
- Your cutting die should have been made with a center mark to align the plate to the magnetic cylinder squarely. If not, you can use a plastic ruler and a fine tip marker to put them on the plate. Using these lines and holding each side of the plate, line up the plate with the cylinder center line. When you are happy with the placement of the plate across the cylinder, release it slowly and the cylinder will grip the plate fully. You can roll the cylinder to the left or right to assist in this procedure
- Close the die access lid and take a single die stroke to ascertain what adjustments you need to make to achieve registration. This could be by lifting and adjusting the plate, moving the web laterally or moving the mark sensor or all three.

Removing plates

Use these instructions to remove a cutting plate from your magnetic cylinder. The die tool is designed for removing cutting plates without damaging the surface of the magnetic plate. Never use other tools or instruments or you may damage the face of the magnetic cylinder which will cause serious damage to your DLP-2000.

- Open the die access lids and depress the emergency stop button fully to release the brake on the magnetic cylinder motor. This will allow you to roll the cylinder into a position where you can access a corner of the cutting die plate.
- Using the die tool, carefully lift one corner of the cutting plate until you are able to grasp the cutting plate.
- Grasp the cutting plate and continue to carefully peel back the cutting plate with your fingers until it is released from the magnetic cylinder.
- Close the die access lids

Step 1:

Use the removal tool to lift a corner of the cutting plate

Step 2:

Roll the cylinder to remove the plate completely

Sitting

The DLP-2000 is fitted with at least 3 shear knives for slitting. These are simple to use and effective in their operation. Follow the directions below for the correct use of your slitting knives

The knives are most effective when slitting liner only, although they can be used to slit stock.

The tip of the knife can be pushed against the front side of the slitting bar.

Use the sideways adjuster to move the knives from left to right once set. A clockwise movement of the adjustment knob will move the knives away from the operator.

Remove and reverse blades if they become dull. Replacement blades are supplied.

When not in use, slide and lock the knives out of the way against the slitter bar. Always use caution when using the knives as they are very sharp.

Always operate the machine with the safety guard on.
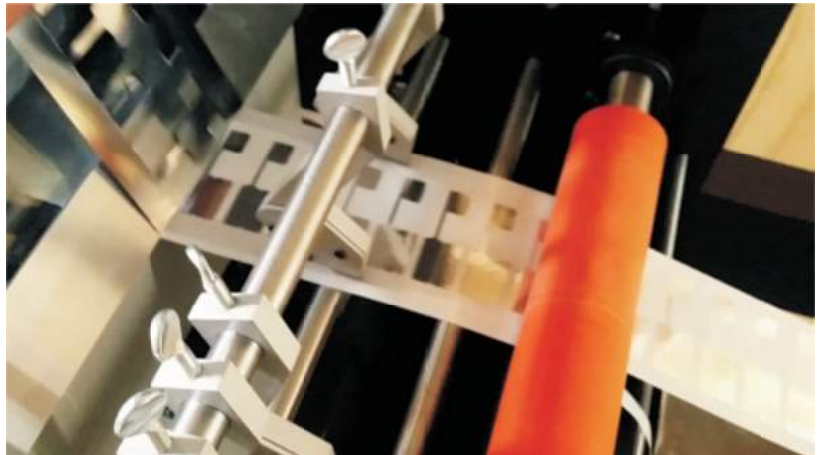
Designing labels

The best way of designing labels will depend on your printer and your label design software. The following information may be helpful although it may not be relevant in all cases.

- Set the page length to the cutting die plate length as indicated (page xxx)
- Set the page width to your media width. Remember that your media width should be wider than the cutting plate width to allow for a black mark that is at least 5mm wide.
- Most graphics packages use guidelines or grids that can be used to separate your label picture into sections that relate to the die. The example below shows a die that is 2 up, that is, two images along the web. In this case you would use your guidelines to split the screen area into two.
- Once you have created the first label design, copy the design and place it where the second label will be printed, again by using the guidelines.
- Place your black mark, which ideally should be about 5mm across the web and 3mm along the web, as close as possible to the center of the printed image(s) as possible. This saves a lot of time in set up and registration.
- With the DLP-2000 you will be able to move the die position in relation to the black mark with full control over lengthways and sideways adjustments as detailed on page xxx.

Cutting Plate Length (Page xxx)
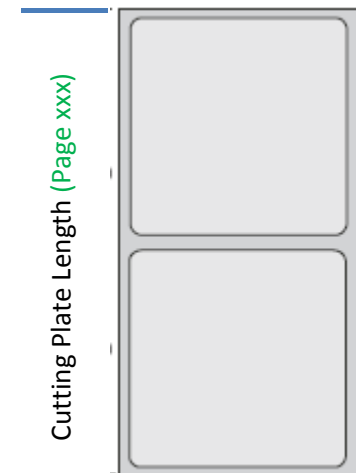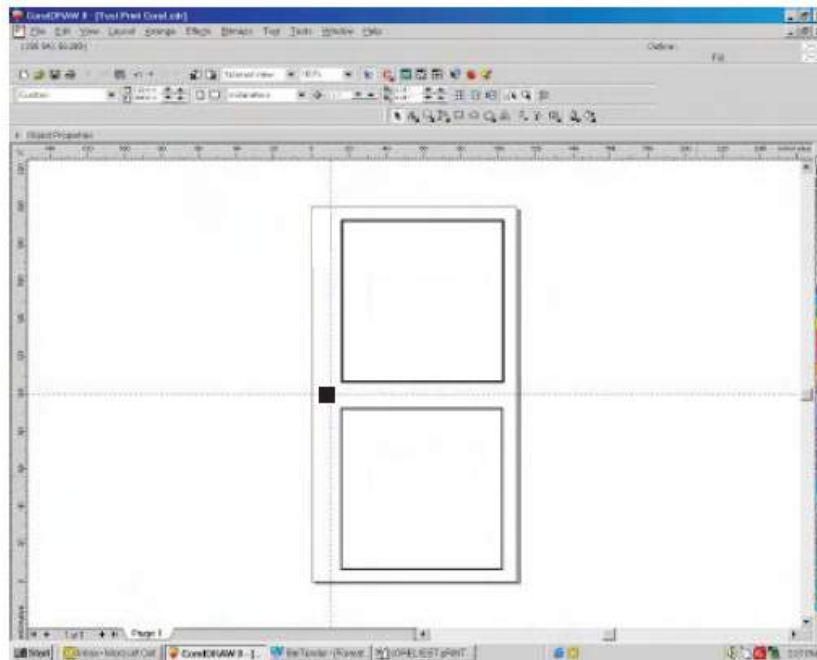
Hint: Try creating a page template with your software program for each cutting plate that you use. Include all details such as page size and black mark size and position. Once you have a template you will find label design extremely simple.

Screen Functions

IMPORTANT: PLEASE NOTE THAT THE DLP MEASUREMENTS ARE IN MILLIMETERS ONLY

With each new job, changes will need to be made to the software that allow for differences in label dimensions, layout, feed, printer or unwind mandrel, whether printed or blank stock, etc. Below is a list of the setting changes that could be made:

- Changing the length of the die travel: JUMP + 1 (To suit longer or shorter dies)
- Changing the length of the paper feed: JUMP + 5 (For different label pitch)
- Changing the length of the encoder ramp down: JUMP + 4 (To ensure registration is maintained regardless of the speed dial setting)
- Changing the mode of cutting: JUMP + 3 (Either reciprocating cylinder or full rotary)
- Enabling / Disabling the loop sensor: JUMP + 3 (To suit the feed method used, IE: from printer or from the unwind mandrel)
- Setting the label count: JUMP + 2 (For a basic label count or a predetermined stop count)
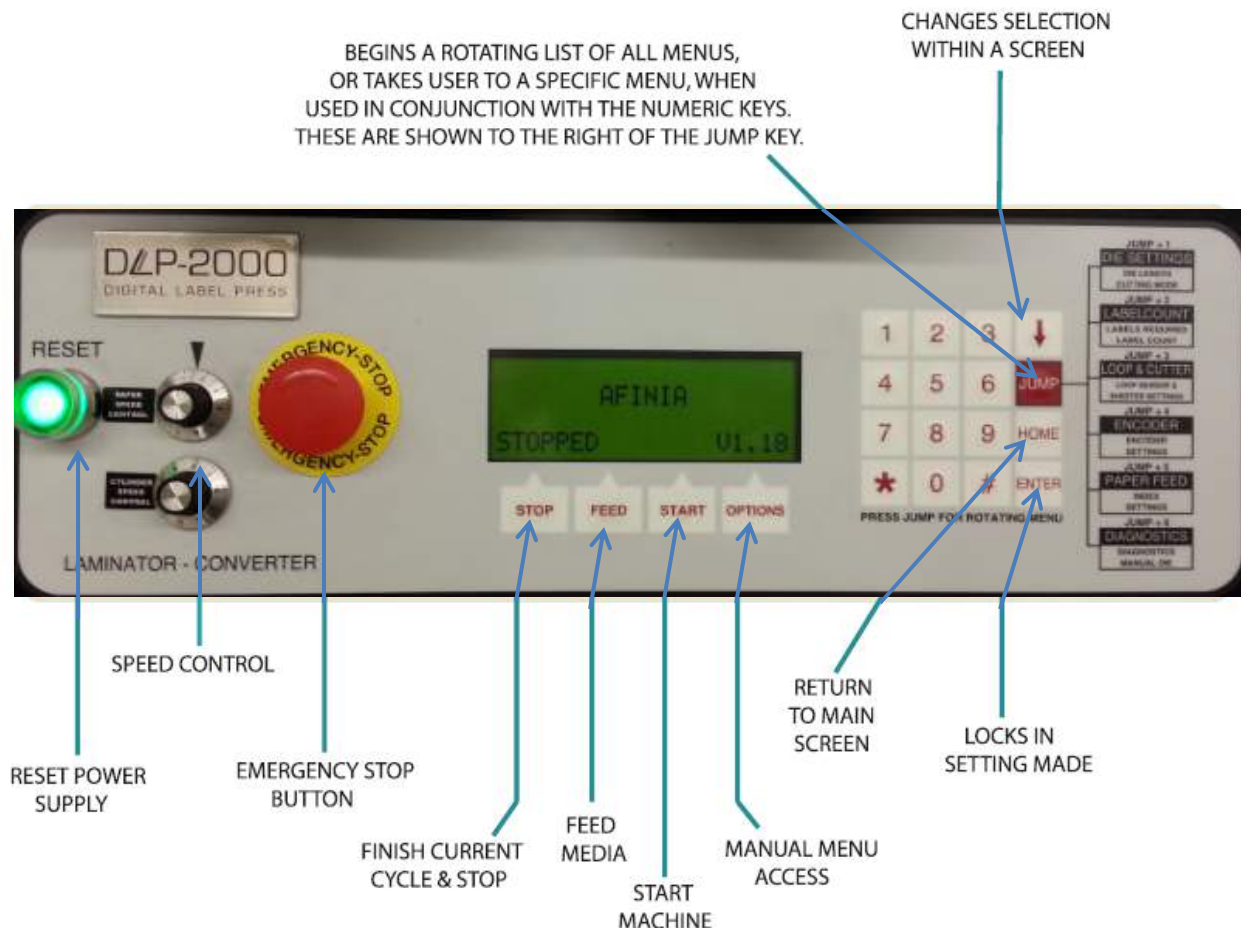
Adjusting die travel

Caution: Ensure that the printer is stopped before opening the die access lid. Close the lid door carefully using the handle only.

To facilitate the most efficient running speed, the DLP-2000 should be set to the least amount of cylinder travel required to perform the cutting action correctly. Follow these instructions to set the die travel correctly.

- Before attaching your cutting die, the ideal travel for the cylinder should be ascertained and set.
- Close the lids and press the reset button
- Press the Jump key and then the 1 key to access the menu for setting the travel length of the magnetic cylinder. Measure the overall length of your cutting die and add 20mm. Enter this measurement into the die length setting and then press ENTER.
  DO NOT EXCEED THE MAXIMUM DIE LENGTH SETTING OF 305MM
- Press the emergency stop button and roll the cylinder into the far left position, ready to attach your cutting die

The die travel is the distance your cylinder needs to travel to correctly perform the cutting operation. The longer your cutting die is, the greater the setting will be
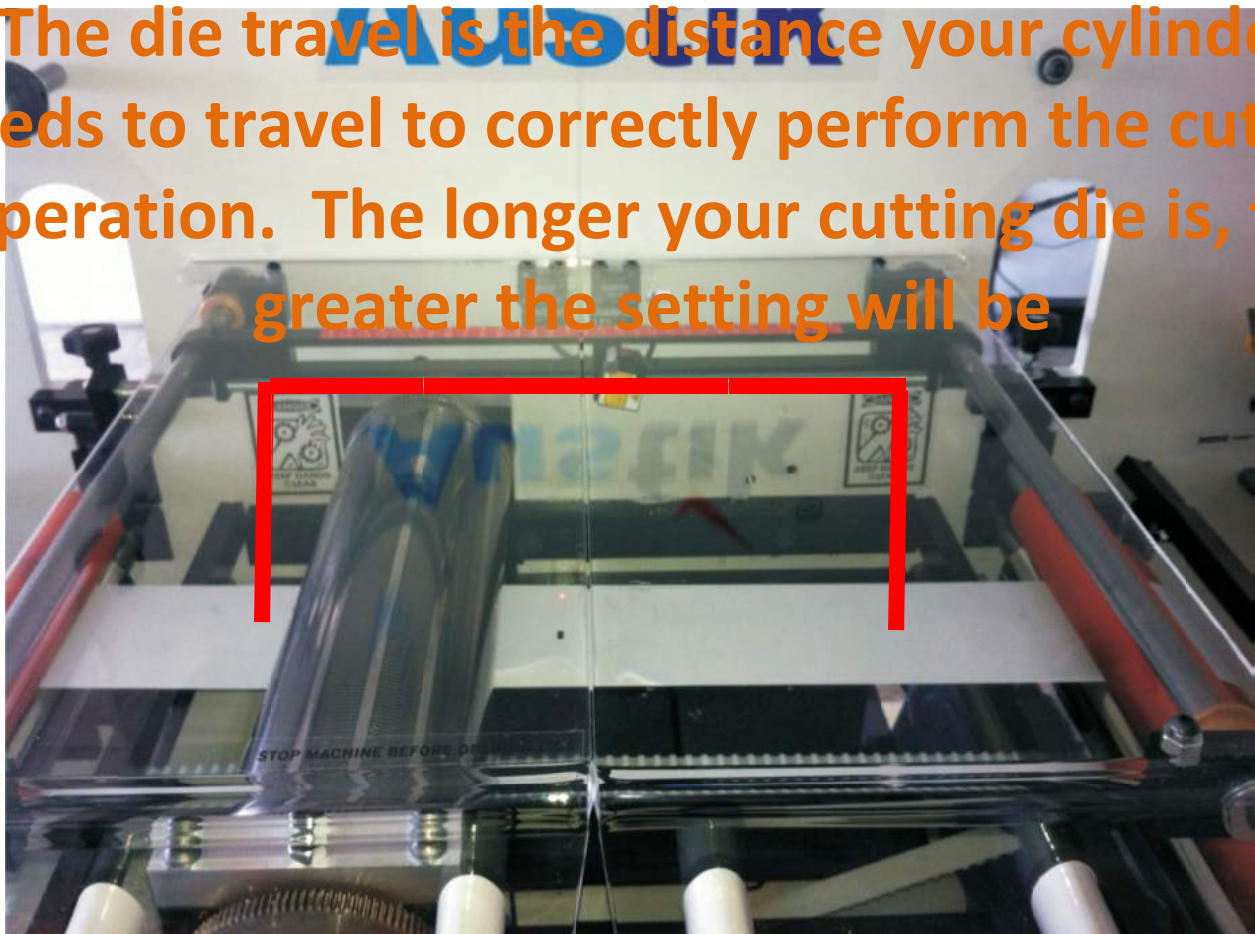
Entering Label Counts

Caution: If you are using media supplied directly to the DLP-2000 by your printer, turn the label count option off and use your printer to count the labels. If you use the DLP count feature, the converter may stop while your printer continues to feed labels.

The DLP-2000 is equipped with a pre-determining counter which enables you to set an impression count, so that you can have the machine run a pre specified amount of labels and stop automatically. Follow the instructions below to set a count value and engage this option.

- Press the Jump key followed by the number 2 key. This will take you straight to the label count.
- To enable or disable the count feature, press the down arrow key to move to the 3rd line. To enable the count feature change the value from 0 to 1. To disable the count feature change the value from 1 to 0.
- To change the labels required value, use the arrow keys to move to the top line. Enter a new value and press Enter to accept the changes. NOTE: The label count assumes you are cutting one label per black mark. If you are cutting more than one label per black mark, divide the number of labels required by the number of labels per black mark and enter this value. Ensure that the label count value is also set to 0 when entering a new label required count.
- The second line indicates the number of labels you have completed.

PRESS JUMP + 2 TO ACCESS THE LABEL COUNT MENU

When the count is reached and the machine stops, simply remove the finished roll, attach a new core, reset the label count to 0 and push start to begin the count again.

Time-out safety setting

If you are using media supplied directly from a printer your machine will stop when the media runs out or your printer stops printing.

You have the option of setting a time out value into your settings. This ensures that if a mark has not been detected within a given time, your DLP-2000 machine will stop and prevent printer damage. To set the time out value, follow these steps.

- Press the Jump key and the number 4
- Press the Options key, taking you to the time out settings screen. Calculate a value to enter into the time out setting. Normally it will be the patch of your black mark plus about 20%. Enter this amount in millimeters and press Enter.
- If a time out occurs, press the emergency stop followed by the reset button, to reset the machine. Slowly feed the web to the next mark and begin running again.

STEP 1
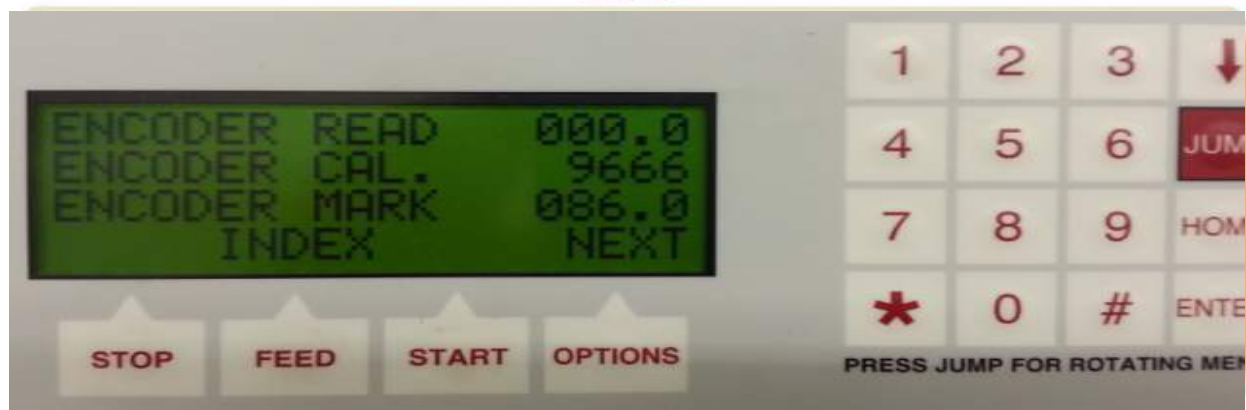
STEP 2

Changing the electronic black mark

Registration on the DLP-2000 is accurate because of the machines ability to sense the distance the paper has travelled through the machine and then slow down to stop at a pre-determined distance. The "slow-down" or "ramp down" in speed is critical to the accuracy of the machine. The following are steps to ensure there is sufficient "ramp down"

- When the operator has set up the DLP-2000 for a new job and the time has come for a test run, it is at this stage that the operator will determine the correct or suitable running speed of the job. Once the desired speed has been set the operator will need to check that the machine is ramping down correctly, before it stops to perform a cutting cycle.
- Ramp down is a slowing down of the machine, to allow an accurate stop point. It is required for accuracy of registration as it allows the brake of the drive motor time to stop without passing the mark because of the inertia of the machine. A small ramp down is all that is required and a change in speed should be detected easily by the laser. In most instances a lack of ramp down will occur when a machine is being run at full speed on a label longer than 6" or 152mm.
- If a ramp down is not detected it is likely that the speed of the machine is too fast for the "electronic black mark" setting. This will create a registration inaccuracy. It is a simple program adjustment, to increase the length of the electronic black mark, to allow for the ramp down. Alternatively the speed can simply be turned down, however this may not be desirable, as the DLP may be running in line with a printer and the speed of the DLP-2000 should ideally be slightly faster than the running speed of the printer.
- The following steps will allow for the quick and easy lengthening or shortening of the electronic black mark, to ensure the optimum running speed and accuracy.
  - Press JUMP + 4 to access the encoder settings menu.
  - Press the Options key to access the Encoder Mark settings screen
  - Highlight the mark length setting by pressing the down arrow key
  - Alter the setting with the numeric keys and press enter to save the setting
  - Test run the machine to determine whether the new setting has been sufficient to effect a visible ramp down

Troubleshooting

Media problems

My media is moving from side to side
- Make sure your paper guides, are fitted up against the media,
- Check to make sure there is not too much pressure on the laminating rollers
- Use the minimum tension possible on your laminate roll
- Make sure your paper clutch is clean
- You must use the Loop roller

My media is breaking when the paper is indexing
- Your die stroke may be set too low.
- Your die may be cutting through the liner
- Is the media threaded correctly?
- Is there adhesive build up on the guides , rollers or anvil?
- There may be something on your anvil or under the die

My media is creasing as it enters the feed rollers
- Make sure your printer - or roll of printed media is aligned correctly with the paper guides
- Lighten the tension on the unwind mandrel clutch.

My label waste matrix keeps breaking
- You may be using too much tension on the waste rewind clutch
- Are your labels cutting correctly?
- Is there too large a gap between your labels?
- Do you have at least 5mm of waste on each side of the media?
- Make sure your stripping bar is clean
- If you are using an irregular shape, you may need to remove the waste at a different angle or position
- or possibly change the orientation of your cutting die to make stripping easier.

My cores are slipping on the mandrel.
- Do not use cores with a wall thickness less than 3mm

My machine will not start when I press the start button
- Is your Loop sensor turned on but not seeing media?
- Are your lids up?
- Has your pre-determined count been reached?
- Try pressing the E-Stop and resetting the machine
- Try turning the machine off and re-starting the machine

My slitting waste keeps going into my label roll or nip roller
- Use the slitting waste aids to encourage the waste to fall to the floor.
- Attach some thin copper wire to one of the steel shafts and drape the wire over the labels, to fire
- off some of the static
- Try running the waste up into the label area of the waste matrix
- If your bench exceeds the machine length, you could cut a hole in it for the waste to fall through
- below the slitters

My lamination is bubbling or creasing as it is applied
- You may have too little tension on your laminate roll
- The laminating nip roller, may be set too lightly, or, unevenly

- Make sure the top and bottom laminating pinch rollers are clean and free of dirt and adhesive

My media is jumping out of the paper guides at the infeed
- Your guides may have an adhesive build up on the inside
- Are you using the Loop roller?
- Your guides may be set too tightly against the media
- Is your media a slit roll? It may be an end roll with varying roll width.

My labels keep wrapping around the nip roller
- You may have an adhesive build up, or part of a label on your nip roller
- Your labels may be lifting slightly, and sticking to the nip roller as they pass through
- Your labels may have a heavy coating weight of adhesive, which may be bleeding from the
- edges of the label, causing them to stick to the roller

Registration problems

I have changed my media and now the sensor is not reading the mark
- You may need to re-teach your sensor as outlined on page xxx
- Is your sensor mark in line with the sensor?

I have added laminate and the sensor is not reading the mark correctly
- If your laminate now covers the sensor mark, you may have to re-teach your sensor

I am using a colored media and the sensor is reading both the mark and the media
- You will have to re-teach your sensor.

My register is moving in and out
- Can you see a visible ramp down as described in page xxx? If not, slow your machine down, or lengthen
- your electronic black mark setting
- Your printer's label pitch may be moving.
- Re-teach your sensor (page xxx)
- Is your machine set to Blank label mode? See page xxx

The cylinder is blocking the sensor
- Increase the Die stroke length as described in page xxx

The machine is timing out before it reaches the mark
- Your front drive nip roller, may not be pressed firmly enough against the paper. The encoder is attached to the front drive roller, so even if the paper slips, the encoder keeps running.
- Increase the pressure of the front nip roller you are using to drive the paper through, to rectify this problem.

My machine runs, my sensor sees the mark, but it won't stop
- Your encoder may not be contacting the front drive roller correctly, or may have moved. See page xxx to rectify the problem.
- The setting for encoder indexing, must always be set to 1. Check the encoder menu at Jump+4, to make sure it has not been set to 0 (off)

Cutting problems

Some of my labels between the marks are cut and some are not
- You may need to increase your die stroke as it may not be long enough to cut the whole die

My die cuts everywhere except one area on one side
- There could be something stuck to the bearers of the magnetic cylinder or the ends of the anvil preventing cutting in that area. Always inspect the anvil and cylinder to make sure they are clean.

My die has gone blunt (or is slightly damaged) in one small spot

- You can underlay the cutting plate, with a very thin material, like a 15 micron BOPP or similar, but the easiest and most permanent way, is to find the low spot and paint a small amount of nail polish, underneath it. Only a small amount will be required. It must be dry before re-attaching the die.

My die is cutting through.

- You will need to order your dies for a particular material, and importantly, for the thickness and type of liner. If you use it on a thicker material than it was made for, it may cut through.
- You can try to reduce the pressure on the adjusters on the side of the die, but only slightly and it must be returned to its original pressure when you are finished. (too little pressure can cause cylinder bounce). Alternatively, change to the material specified, (or at least the liner) when you ordered the die.

My die is new and will not cut properly.

- Remove the die and test another die that you know works on the media you are using. If there is no problem with the other die, check the instructions you have given the die maker for the new die.
- If all is in order, do not attempt to make the die work, by underlaying or any other method.
- A new die should cut perfectly and you should contact your supplier and request a replacement immediately.

My die cuts along the web, but not across the web.

- Are you cutting the specified material for which the die was ordered.
- How old is the die? If it has been cutting polyester or another abrasive material, it may simply be blunt.
- The across the web cuts, work a lot harder than the along the web cuts, so they are generally the first to wear.
- Double check that you have enough pressure on the die adjusters as well, as the cross cuts require more pressure, to cut through the face stock than the along the web cuts.
- Do not use excessive force when tightening the die adjusters. You may damage the bearings or drive motor.

My die cuts through intermittently, about ever 6-7"

- You need to check your anvil, as it is most likely that there is something stuck to it.

Electrical problems

My machine will not start at all and there is no display on the screen

- Is your machine plugged in?
- Is your machine switched on?
- Is there power to the wall socket?
- If so, check the fuse inside the power supply where the plug goes into the machine.

My display screen is on, but the machine won't start

- Does the Loop sensor "see" any paper
- Has the pre-determined counter reached its setting?
- Is the E-stop depressed, or, are one of the lids open?
- Is the RESET switch illuminated?
- Is the speed dial turned right down to 0?

My machine stopped suddenly

- Check that the unwind is working and feeding paper to the loop sensor properly
- Check the label count screen, in case it has reached its target setting
- Have you knocked one of the lids and stopped the machine?

- If so, press RESET and start again.
- If the display reads "Time Out", you have missed a mark and will have to restart the machine
- If the paper feed motor is under undue stress for a period of time, the machine can shut down as a safety thermal overload is activated.
- Shut the machine down and wait a couple of minutes, then re-start.

My machine stalls and slows, when I turn the speed dial above 6

- The converter uses a .4kw inverter drive for the index motor, which is a .4kw motor. As a protective measure, the motor will not allow more power than its maximum to be used. The speed pot should not be run past the point where this happens, as it will simply slow the production down. Generally, this has been altered in the inverter settings.

I am running full stroke on my die (305mm) and the cylinder carriage is hitting the end stops.

- There is a separate speed control for the Die cylinder motor. It should normally be set to maximum on the pot but if in the case of a full stroke job, the cylinder is touching the ends, simply lower the speed of the cylinder slightly until this does not occur. It is located, on the electrical box.
- Do not allow the cylinder to hit the ends constantly, as damage will result.

Maintenance

Maintenance Schedules

> The following are recommended maintenance schedules to ensure the continued trouble free running and operation of your DLP-2000 machine.   Following these schedules is strongly advised as they will ensure your machines longevity.

Daily

- Each morning, clean the anvil and also the end bearers of the magnetic cylinder thoroughly and apply a thin layer of spray lubricant with a cloth to all of these areas.
- Apply a few drops of oil to the gears of the magnetic cylinder and the carriage rails.
- Using the Feed button, with the machine on low speed, inch the machine over and clean the entry and exit nip rollers. Do not wipe these rollers while the machine in in motion.
- Clean any adhesive residue from the paper infeed rollers, paper guides and anywhere else it may have built up along the web paths.
- Check that the mark and look sensors are connected and operating correctly.

Weekly

- Apply a drop of oil to each of the clutch adjustment know threads.
- Apply a drop of oil to the thread of the paper carriage adjustment knob.
- Apply a drop of oil to each of the brass roller carriage ends.
- Apply a drop of oil to the thread of the slitter adjustment if applicable.
- Thoroughly clean the clear lids on both sides with a window cleaner and soft cloth. DO NOT USE strong solvents to clean the lids.
- Gently clean any paper / glue residue from the paper infeed clutch pads with a dry cloth.
- Depress the emergency stop button to release the brake and while rolling the magnetic cylinder back and forth, check that the die travel encoder proximity switch, located behind the paper carriage next to the die travel motor, flashes evenly in each direction.

Monthly

- Carry out a visual inspection of the entire machine to check for any parts that may have been tampered with, loosened or adjusted improperly and rectify these.
- Use a mild cleaning detergent, clean the entire body of the DLP-2000.
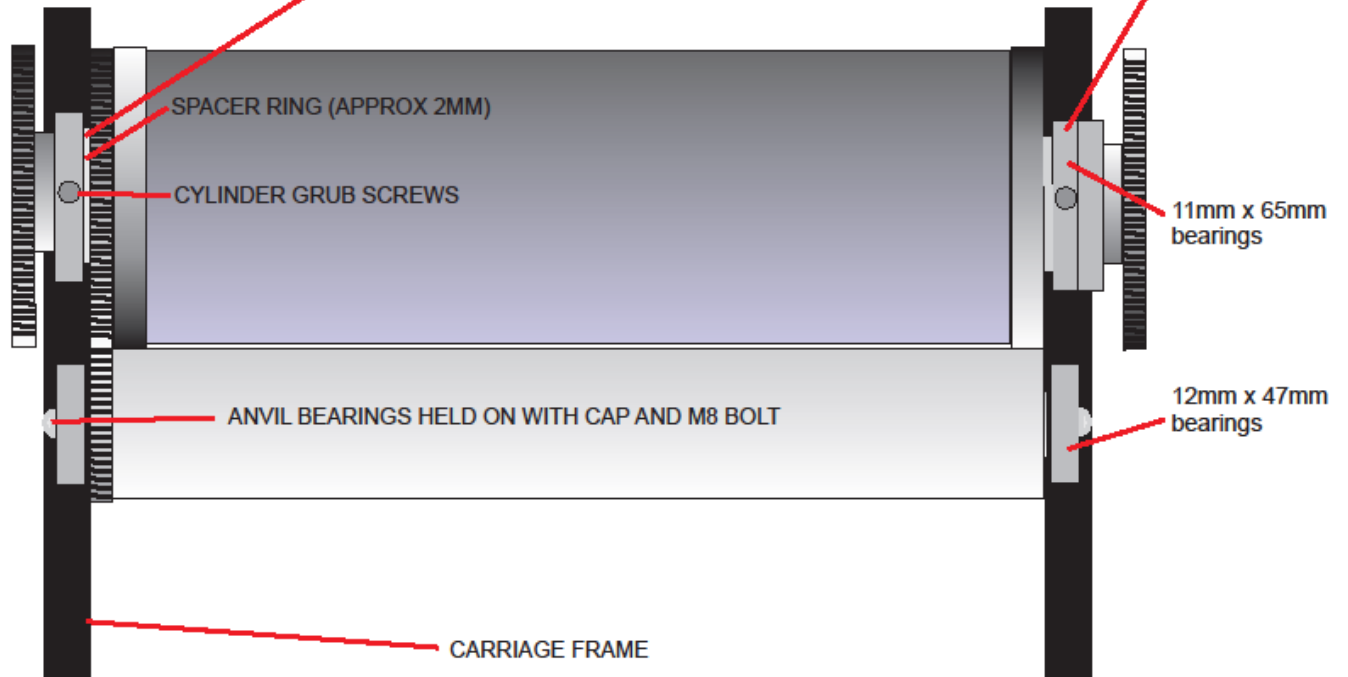- Report any damaged or work parts for replacement.

Magnetic cylinder assembly

Here is a description of the magnetic cylinder assembly found in the DLP2000.

This drawing shows the basic head construction.
If there is any play between the bearing and the cylinder, this may allow the cylinder to move.

Make sure the bearing is pushed up hard against the cylinder on both sides, then lock with the grub screw. This prevents any cylinder movement.
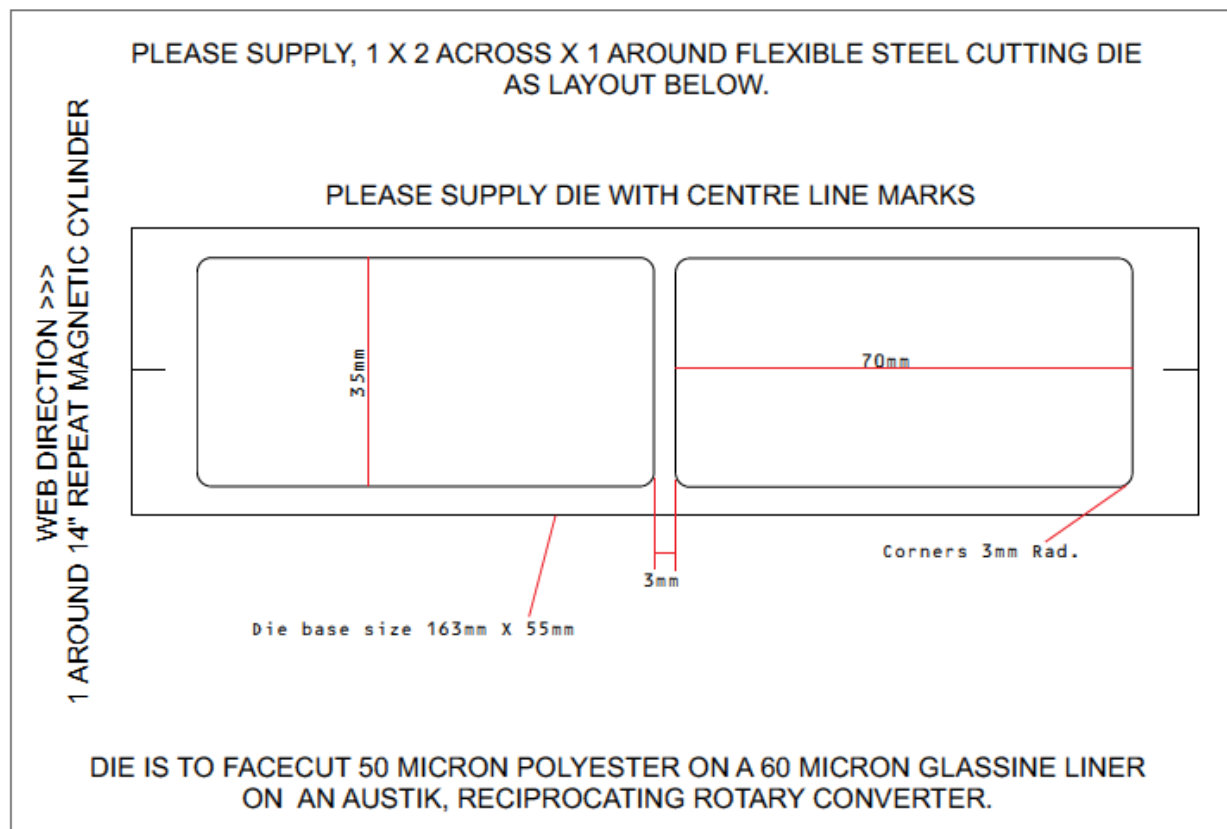
SPACER RING (APPROX 2MM)

CYLINDER GRUB SCREWS

11mm x 65mm bearings

ANVIL BEARINGS HELD ON WITH CAP AND M8 BOLT

12mm x 47mm bearings

CARRIAGE FRAME

Buying cutting plates

What and how to order

> Important: The following information should be used as a guide only. Please consult your die maker for their specific requirements.

Below is an example of the information that will be required by your die maker when ordering a die. The example is of a 1 around by 2 across rectangle, 35mm x 70mm. It is advisable to supply a sample of the material to be use, with your order, if you do not have specifics on the label material.

PLEASE SUPPLY, 1 X 2 ACROSS X 1 AROUND FLEXIBLE STEEL CUTTING DIE AS LAYOUT BELOW.

PLEASE SUPPLY DIE WITH CENTRE LINE MARKS

WEB DIRECTION >>>
1 AROUND 14" REPEAT MAGNETIC CYLINDER

35mm

70mm

Corners 3mm Rad.

3mm

Die base size 163mm X 55mm

DIE IS TO FACECUT 50 MICRON POLYESTER ON A 60 MICRON GLASSINE LINER ON AN AUSTIK, RECIPROCATING ROTARY CONVERTER.

You will see from this example, the following are required when ordering a die:

- Label size
- Number across and around
- Gaps between labels across and around
- Corner radius
- Specifics of the media to be cut or supply a sample
- Detailed layout you require including center marks
- Base plate size you require
- Web direction
- Magnetic cylinder circumference
- Type of machine being used

Magnetic Cylinder Information

Your magnetic cylinder has been products by RotoMetrics® US and is manufactured by their standard cylinder gap.

RotoMetrics

Certificate of Conformity

The enclosed item(s) conform to the following specifications within standard tolerances.
(Metric Units)

RotoMetrics Australia Pty. Ltd.
ABN 41 081 255 094
65 Northcorp Boulevard
Broadmeadows, Victoria 3047
Australia
Tel: 61 3 9358 2000   Fax: 61 3 9358 2020
Email: MLB.Sales@RotoMetrics.com

Customer: Austik Pty Ltd

Customer Number: 12571

PO: 2014478

Customer Mark: 113T

Order Placed By: John Stewart

Salesperson: Matt Bradbury

Product: Magnetic Cylinder

RotoMetrics Drawing Number: 939613

Number of teeth on Gear: 113

Roll Repeat: 355.000

Lift Bolts: N

Sales Order Number: 5419015-2

Serial Number: WHQ14-12-29497

Press Type: 9.5 SPECIAL

PPA: 1.00 MOD 20

Measured Bearer Diameter: 113.068

Measured Body Diameter: 112.116

Final Diff:

Bearer Diameter - Body Diameter = Diff

Bearer Diameter
Body Diameter

Mirror-finish tight-tolerance magnetic cylinder:
Difference of body and bearer diameters held to +.0000/-.0001"(2.5 microns).

Checked by Employee No. S00104

Date: 30-DEC-14