DOMINO

C-Series *plus* Printer

Operation and
Maintenance Manual

plus

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DOMINO C-SERIES *plus* PRINTER OPERATION AND MAINTENANCE MANUAL

This manual, Part No. 77144, is for use with the Domino C6000, C6000(i,) C6000MF, C6000v, C3000, C3000X, C1000, C1000X ***plus*** Printers.

For further printer maintenance information, call Domino.

For sales, service and inks enquiries, please contact:

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C-SERIES *plus*

EC DECLARATION OF CONFORMITY

(in accordance with ISO/IEC 17050-1)

No. 77144/1

Issuer's name: Domino UK Ltd.

Issuer's Address: Bar Hill, Cambridge CB3 8TU

Object of the declaration: Domino C1000, C1000X, C3000, C3000X, C6000, C6000(i,) C6000v and C6000MF Printers

The object of the declaration described above is in conformity with the requirements of the following documents:

EN 61000-6-4:2007 Electromagnetic Compatibility (EMC). Generic Standards. Emission standard for industrial environments.

EN 61000-6-2:2007 Electromagnetic Compatibility (EMC). Generic Standards. Immunity Standard for industrial environments.

EN 55022-1 1998 Class A : Electromagnetic Compatibility (Radiated).

EN 60950:2000 Safety of Information Technology Equipment.

2006/95/EC : Low Voltage Directive.

2004/108/EC : EMC Directive.

Signed for and on behalf of:

Domino UK Ltd.
Bar Hill,
Cambridge,

August 2009

Pete Jakes

OCC Technical Manager

CONTENTS

SAFETY INFORMATION

SAFETY RECOMMENDATIONS

Before proceeding with installation, using or maintaining the printer, please read this section of the manual carefully.

Domino UK Ltd. shall not be liable against any damage or problems that arise from the use of any options or consumable products other than those designated as original Domino UK Ltd. or Domino UK Ltd. approved products.

Fire safety

The C-Series range of inks are not classed as flammable. In the event of an electrical fire, combustion of the ink may produce toxic and irritating vapours. Locating the printer in a well ventilated location is highly recommended. The inks are also sensitive to ignition by electrostatic discharge, precautions must be taken to prevent this form of ignition occurring.

Please refer to the Domino Safety Data Sheet (SDS) for further details.

Maintenance

WARNINGS: (1) When performing any maintenance tasks that involve the disassembly of any part, ensure the mains power is removed.

(2) Ink contact with the eyes must be avoided, therefore eye protection must be worn whenever there is risk of ink splashing or misting.

CAUTION: *The printer must always be kept upright, with the keyboard facing upwards. During transit and in general handling, the printer should not be tilted by more than 15 degrees. When installed, the underside of the printer should be as close to horizontal as possible, so that the printing nozzles are in a vertical line (not applicable to remote heads). The printer should never be subjected to knocks or vibration.*

If damage occurs to the mains plug or cable, replace immediately by contacting your local Domino office.

INK

The use of ink other than supplied by Domino UK Ltd.will almost certainly result in the damage of the print head.

When handling ink or cleaning ink spillages, care should be taken to avoid contact with skin or eyes.

Protective glasses and gloves must be worn. In the event of contact with skin, eyes, or ingestion, follow the first aid instructions below and refer to the relevant Safety Data Sheet (SDS).

Eye contact

Flood the affected eye for 15 minutes with saline solution (or clean water if saline solution is not available), taking care not to allow the water to run into the unaffected eye. Medical aid must be obtained immediately.

Skin contact

Remove contaminated clothing. Wash skin with water. If symptoms develop, obtain medical attention.

Ingestion

Wash out mouth with water and give 200-300ml of water to drink. Do not induce vomiting. Obtain medical advice.

Inhalation

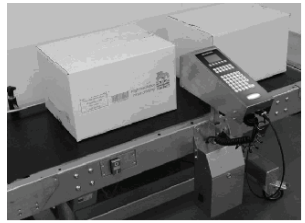
Remove patient from exposure, keep warm and at rest. Obtain medical attention if ill effects occur.

Storage and Disposal

If storing any ink, containers should be tightly closed. Keep ink away from oxidising agents and precautionary measures should be taken against contact with static discharges.

Disposal of any ink containers or ink spillage's should be in accordance with local, state or national authority legislation.

INTRODUCTION



The C6000(i), C6000v, C3000(X) and C1000(X) are the latest in high resolution ink jet case coders, capable of printing up to 8 lines of text, graphics, various barcodes, box counts and time/date functions, all from its stand alone unit. The text ranges from a maximum character height of:

C6000(i): 70mm to a minimum of 8mm

C3000(X): 35mm to a minimum of 4mm and

C1000(X): 17mm to a minimum of 2mm,

and is editable with various formats.

The (X) designates that the printer has a remote print head (attached to the control unit via a conduit). The (i) designates a remote inclined print head (also attached to the control unit via a conduit), this can be used where a conveyor is not horizontal. Unless otherwise stated in this manual, the information refers to all variants.

The maximum recommended printing speed is up to 144 metres per minute with four different font heights available.

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PRINTER SPECIFICATION

Print Head (Remote)

Standard Finish:	Grained 304 Stainless Steel
Dimensions: (width x height x depth):	(128 dot): 39.5mm x 71.5mm x 65mm
	(256 dot): 59.5mm x 90mm x 90mm
	(500 dot inclined): 79mm x 114mm x 187mm
	(500 dot): 79mm x 170mm x 114
Conduit Length:	(128 & 256 dot): 1.0m
	(500 dot only): 1.5m

Control Unit

Standard Finish:	Grained 304 Stainless Steel
Dimensions: (width x length x height):	(128 dot): 113mm x 295mm x 125mm
	(256 dot): 113mm x 295mm x 146mm
	(500 dot): 113mm x 370mm x 160mm
Control Panel Material:	Polyester Membrane Touch Panel

Base

Standard Finish:	(200ml) Grained 304 Stainless Steel
	(2 litre) Grained 304 Stainless Steel
	Grained 304 Stainless Steel
Dimensions: (width x length x height):	(200ml): 152mm x 360mm x 108mm
	(2 litre): 228mm x 507mm x 139mm
Dimensions (incl. bracket): (width x height x depth):	289mm x 520mm x 252mm
Weight (no fluids):	16.3kg

Data Input

Interface	Rate
RS232:	300 - 115200 Baud Software Configurable
TCP/IP:	10BaseT

Environment

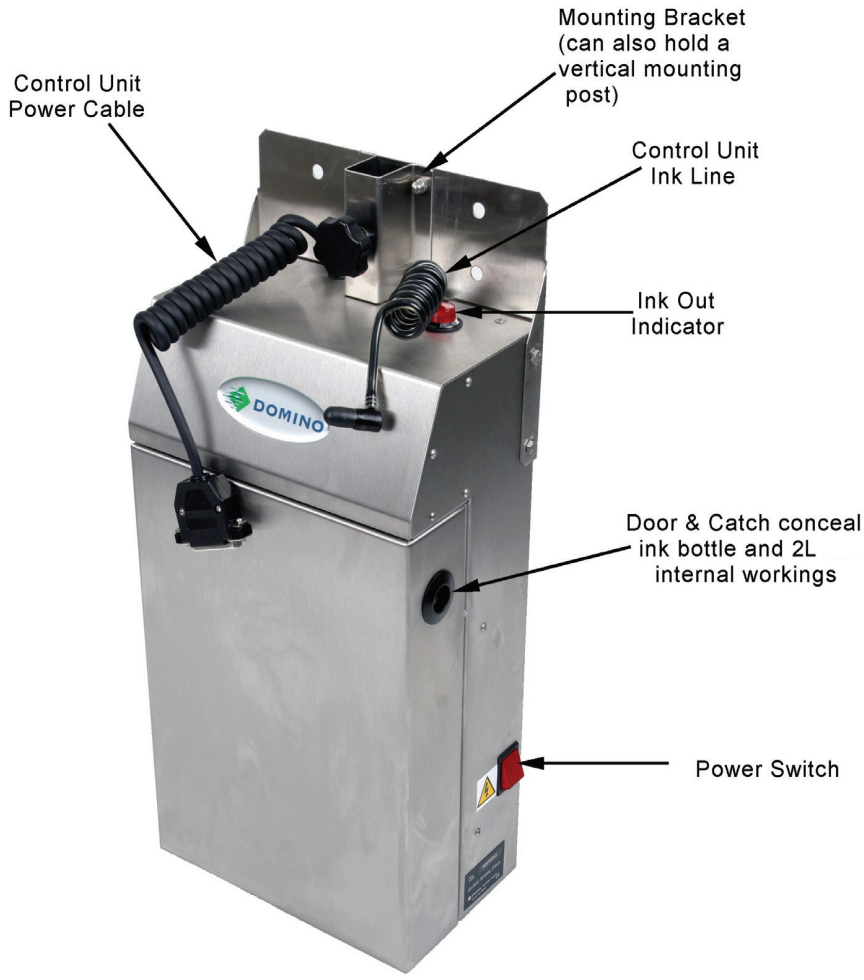
Temperature Range (working):	+10°C to +40°C (50°F to 104°F)
Humidity:	10 - 90% RH
Electrical Supply:	Single Phase, 90-240V @ 50-60 Hz

Base Unit Connectors (MHB)

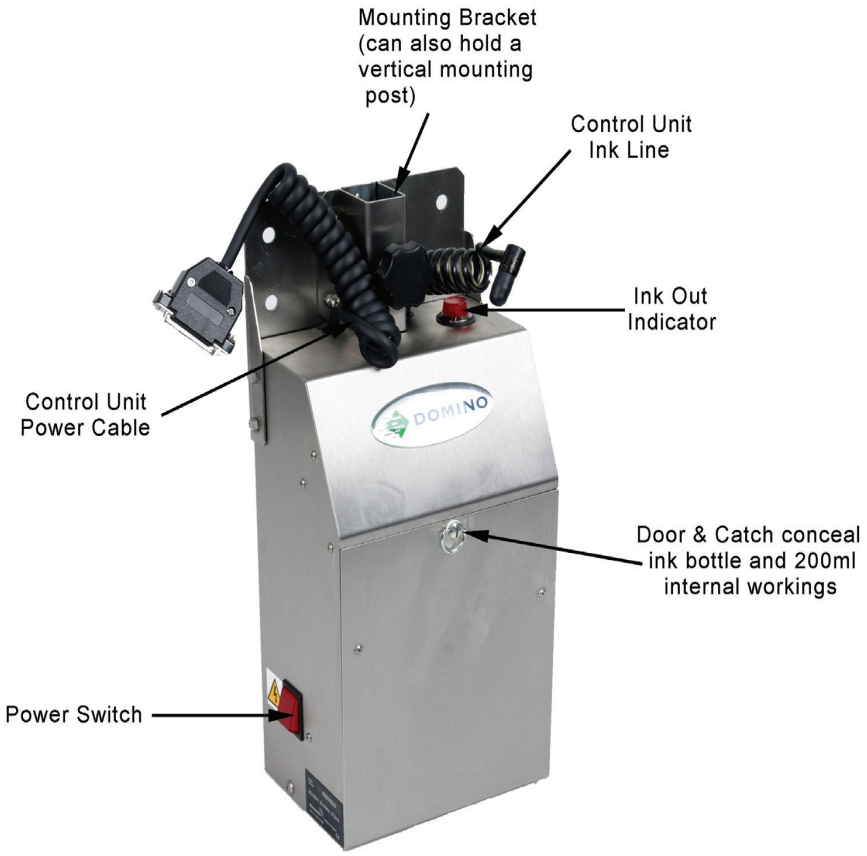
Power Connector:	IEC
Product Detector Connector:	DIN 5-way 180
Shaft Encoder Connector:	DIN 4-way
Shaft Encoder Input:	PNP
RS232 Connector:	9-way D
Bottle Empty Alarm Connector:	DIN 5-way 240
Ink Out Alarm Connector:	DIN 5-way 240
Base and Head Connections	
Product Detector Connector:	DIN 5-way 180
TCP/IP Connector:	RJ45
"Bottle Out" Alarm Connector:	DIN 5-way 240 (2 litre base only)
Shaft Encoder Connector (via Accessory Connection Box (ACB)):	DIN 4-way
Shaft Encoder Input:	PNP
RS232 Connector (via ACB)	9-way D
Ink Out Alarm Connector (via ACB)	DIN 5way 240
Power Connector	IEC

BASIC OPERATIONS

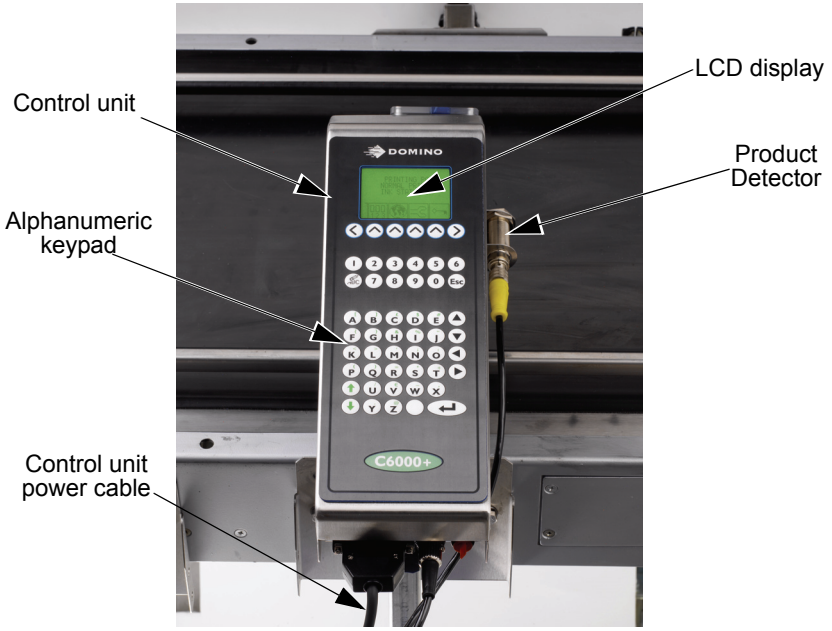
Multi-head Base Unit

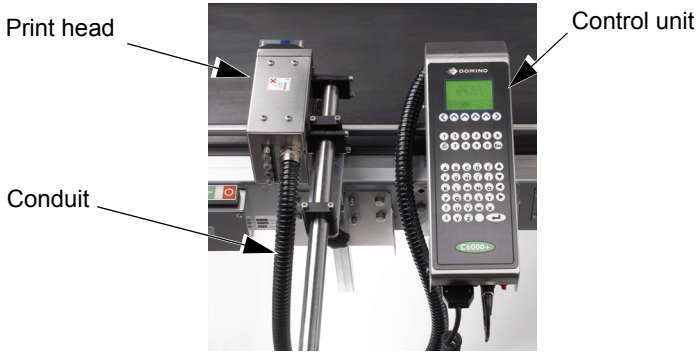


2 Litre Base Unit



200ml Base Unit

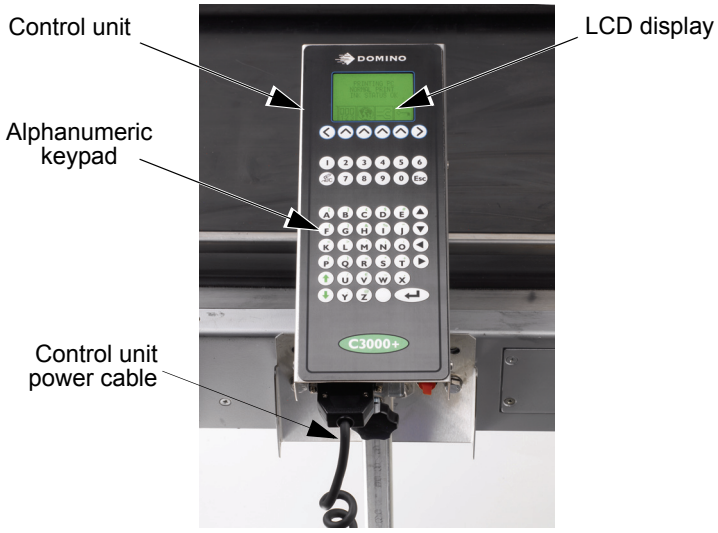


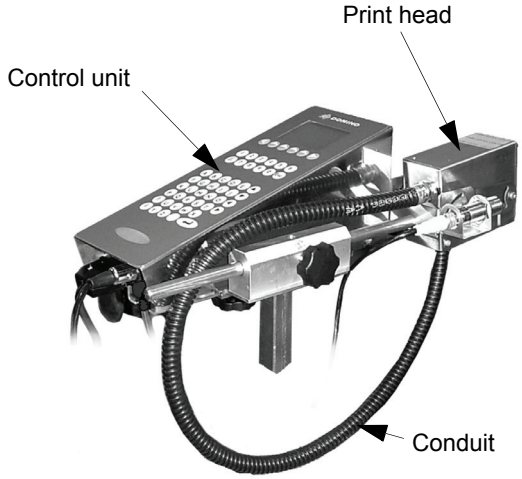


C6000i Control Unit and Print Head

C6000(i) Control Unit

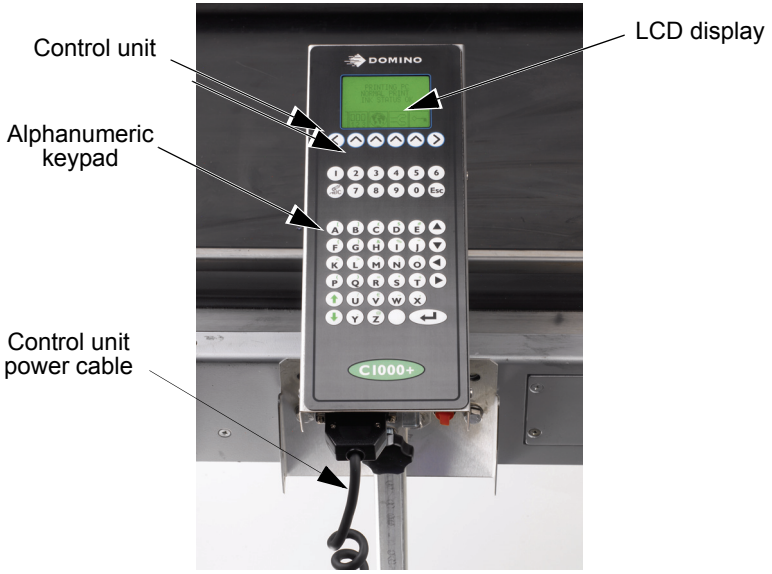
C6000MF - Control Unit





C3000X Control Unit and Print Head

C3000(X) Control Unit



C1000X Control Unit and Print Head

C1000 (X) Control Unit

BASE UNIT MOUNTING

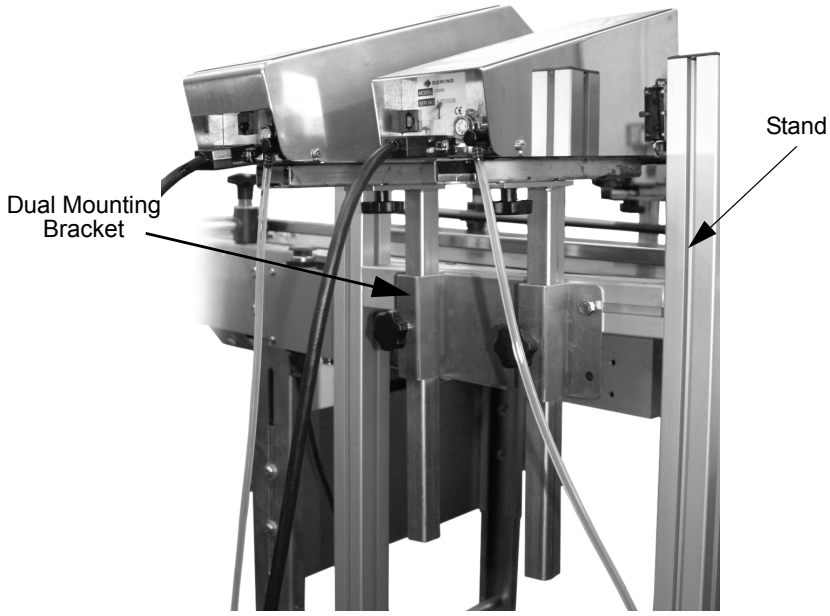
The base unit and control units must be mounted either on a stand or onto the conveyor.

Multi-head Base Stand

Conveyor

DUAL MOUNTING BRACKET

Domino can supply a mounting bracket to enable two print heads to be mounted next to each other on the stand.

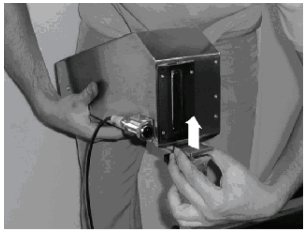


CONTROL UNIT HEAD MOUNTING

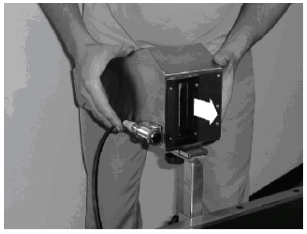
Note: It is recommended that control units are mounted on stands.

(1) To mount or dismount the control unit head, loosen the fixing knob on the top of the vertical mounting post.

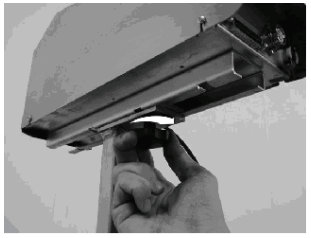
(2) Mount the control unit by gently moving the unit's slide bar over the loosened clamping plate. Ensure that the unit is well supported during this operation.



(3) Ensure the front of the unit is facing the conveyor belt as shown. To dismount the unit, move the slide bar back off the loosened clamping plate, ensuring that all connections to the control unit are unplugged.



(4) When the control unit has been moved to the required position, tighten the fixing knob at the top of the vertical mounting post.



Views show C6000

CONTROL UNIT HEIGHT ADJUSTMENT

(1) The vertical mounting post on the printer base unit can be adjusted up or down to the required height. This operation should be carried out with the control unit in place.

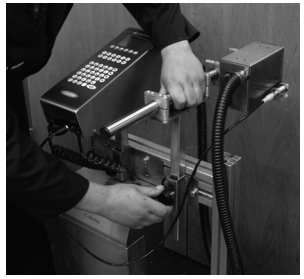
Note: *Picture shown with control unit removed for clarity.*

(2) Tighten the fixing knob on the front of the vertical column so that it is holding the vertical mounting post securely in place.

CAUTION: *The C6000i print head and control unit must be adjusted to the same height (bases) and must be kept in the same environment.* *Refer to page 30 for printing at angles.*

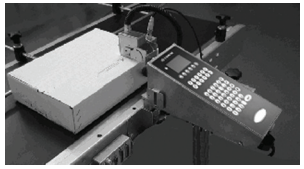
Base of Head and Base of Control Unit must be at same height when printing vertically

(3) To Adjust the C6000i print head, slacken the fixing knob and adjust to the required height.

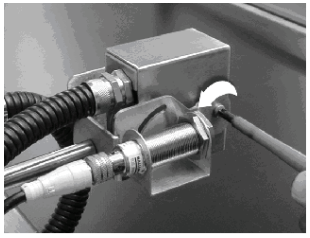


ROTATING THE REMOTE HEAD 90° - C3000X AND C1000X ONLY

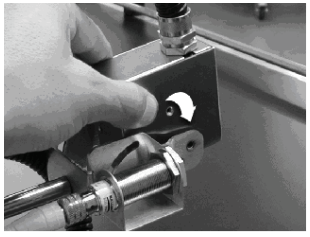
(1) To set a remote head to print down, the head must be set to the correct height to provide adequate tolerance for the print surface to pass beneath it. By adjusting the length of the bracket arm, the position of the message can be placed accurately on the print surface.



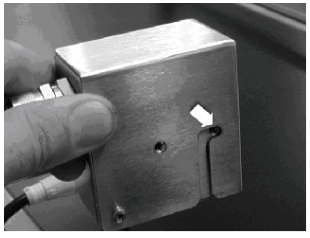
(2) Before setting the print the head must be rotated. The pivot point of the head will need switching as follows; release the bracket screws on either side of the head, ensure that the head is held securely and the ship cap is attached.



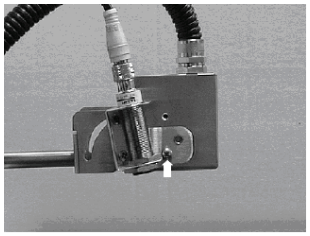
(3) Whilst holding the head, gently rotate it to the position indicated.



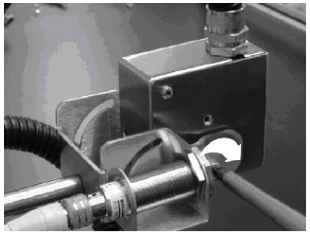
(4) There are two sets of fixings on either side of the head, use the ones shown.



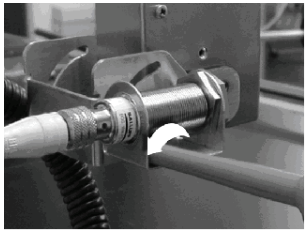
(5) There are two pivot points on the remote head bracket. The top right position is for forward and angled printing. The lower left pivot point (indicated) is the mounting position for printing down.



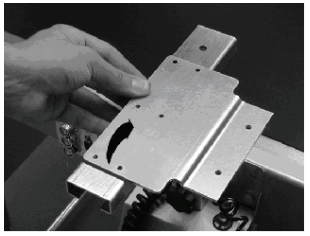
(6) Align the fixing holes and the pivot point on the mounting bracket and refit the screws enough to secure the head. Do not over tighten.



(7) The sensor must also be inverted by slackening the bottom left screw on the sensor bracket and pushing the sensor up so that it is facing down, ensuring that the sensor is not triggered by the conveyor.



(8) The remote head mounting plate must be removed and turned over to compensate for the drop in height due to the new pivot point. The mounting plate has a bend on one side that increases the head height by 9mm, see step (3) on page 34. To do this, dismount the control unit, remove and flip the plate and remount the unit to the vertical pillar.



PRINTING AT ANGLES - C6000i ONLY

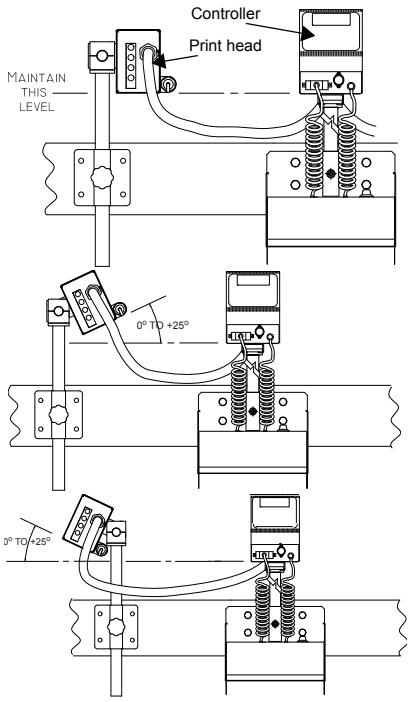
When printing horizontally, the controller should be mounted so that the bottom face is level with the bottom face of the print head.

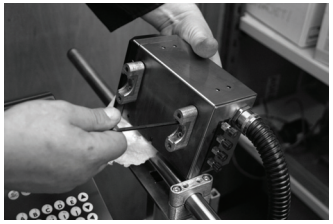
The print head can print up to a maximum angle of 25° as long as a positive angle is maintained – i.e. the bottom dot position should be higher than the bottom of the controller face. To achieve this, the print head should be mounted on either side of the mounting post as follows:

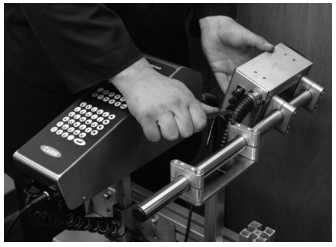
Note: *Before repositioning the mounting brackets, ensure the ship cap has been fitted and the vent valve is shut. Ensure that the conduit does not become twisted whilst the print head is removed from its mounting.*

(1) Remove the bracket and print head from the mounting post, then remove the bracket from the print head. Take care to retain screws and nuts.

(2) Mount the bracket on the other side of the print head and refit to the mounting post. Adjust the print head to the required angle (up to a maximum of 25°).







(3) After the print head has been mounted at the required angle, check the ink flow from the controller to the print head (for initial start up it may be useful to place tissue beneath the print head face):

(a) If the print head face is weeping:

(i) Ensure the bottom edge of the print head is the same height as the bottom face of the controller.

(ii) Ensure that the print head angle has not exceeded 25°.

(iii) If the print head is still weeping, it is recommended to lower the controller slightly whilst observing the print, until the weeping around the lower dot position has stopped.

(b) If any dots are missing from the message (particularly at the top), it may suggest that the controller is positioned too low in relation to the print head. In this instance, the controller should be raised slightly whilst observing the print until the dots re-appear.

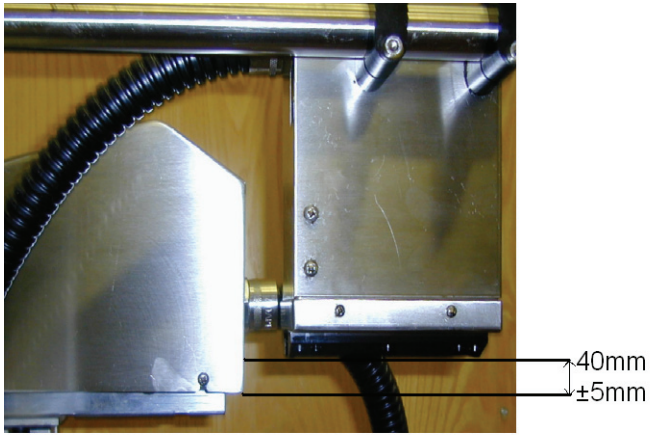
PRINT HEAD SETUP – C6000V ONLY

The C6000v is designed only to print vertically down - for this to work there must be a difference of 40mm ± 5mm between the bottom of the unit and the face of the print head.

When first putting ink in the unit there are a few procedures that should be followed to ensure that the printer works as expected and that it removes all the air from the print head.

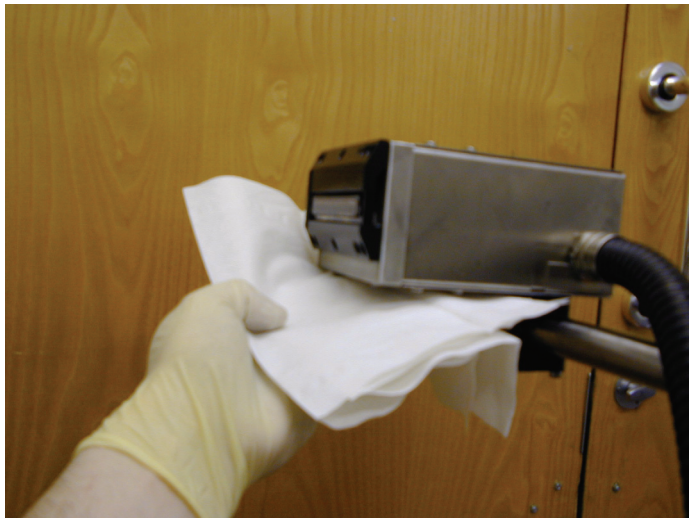
Setup Procedure

(1) Place a suitable ink bottle in the base and set the head to the correct height; this is 40mm ± 5mm between the bottom of the unit and the face of the print head. Let the unit top up with ink so that it displays 'ink ok'.



(2) With the ink line disconnected, prime heavily until the unit displays 'ink low'. Turn the unit off then lift the head cover to close the AR/03 valve.

(3) Turn the unit back on. It will display 'ink-low'. Place a container or cloth under the print face to catch the ink. Then reconnect the ink line. This will give a continuous ink flow from the print head. Once all the air stops coming out of the print face, switch off the unit, lift the cover and open the AR/03 valve.



(4) Turn the head 90 degrees. Prime heavily, catching the ink in a suitable container or cloth until all air is removed.

(5) Turn the head to its original vertical position.
Clean the head and test (see 'Head Cleaning' and 'Priming' on the next page).

After the setup has been completed there are several things to look for. Below are a few examples:

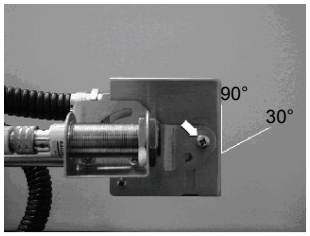
(a) Weeping: If the head is weeping then ensure that the AR/03 is open and that all air has been removed by priming the unit. If weeping continues then raise the print head, remembering that the maximum height for the face of the print head should be 45mm from the bottom of the unit.

(b) Missing channels: If a channel is missing on the test print, prime the unit and if the problem persists lower the print head. No lower than 35mm from the bottom of the unit.

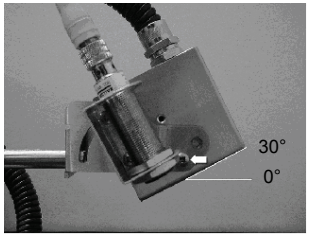
(c) Missing dots: Prime the unit. If this does not fix the problem then clean the print head face with either WJ-910 or WJ-911.

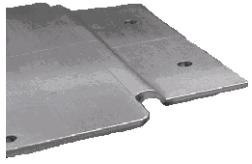
PRINTING AT ANGLES - C3000X AND C1000X ONLY

(1) The remote head must be tilted in the bracket arm to the required angle as follows; slacken the two bracket fastening screws and, using the top right pivot point, rotate the head to the required angle. Note the minimum and maximum angles for the top pivot.

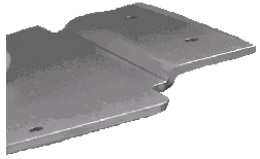


(2) If a smaller angle is required, the lower pivot point must be used. When the lower pivot point is used, the bracket mounting plate must be turned over to compensate for the height difference between the two pivot points. The picture shows the different bracket orientations.



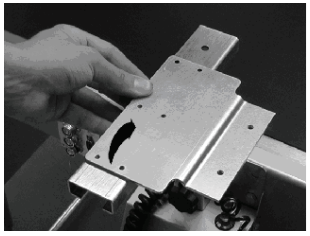


If using the top right pivot point the bend in the bracket plate should be facing down.



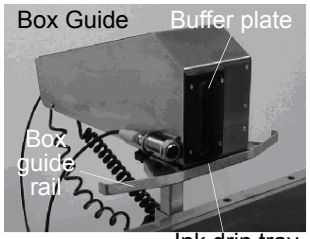
If using the bottom left pivot point the bend in the bracket plate should be facing up

(3) Turn the mounting plate in the direction indicated to correspond with one of the orientations outlined above, this will depend on the pivot point chosen. Align the holes then mount the control unit and the remote head bracket to the sliding bar.



HEAD MOUNTED BOX GUIDE

Some conveyors require extra guidance rails for the boxes to travel on the conveyor without twisting or hitting the control unit. The head mounted box guide rail controls the distance between box and print head and also corrects the misalignment of boxes that have moved out of the correct printing path. The box guide should only be used in conjunction with conveyor guide rails. For installation instructions on this box guide refer to your local Domino office. Instructions for changing the ink collection sponge are on page 131.



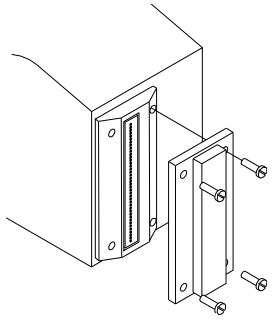
SHIP CAP ATTACHMENT

The ship cap is the protective cover placed over the nozzle plate to protect it during transit and from dust when it is not in use for more than 24 hours.

Fit the ship cap to the print head as follows:

(1) Align the ship cap screws with the holes either side of nozzle plate on the front of the control unit and tighten the screws.

(2) Screws should be tightened to the following torque:



Ship cap attachment

C1000 and C1000X - 0.34 N.m
C3000 and C3000X - 0.68 N.m
C6000, C6000MF, C6000v and C6000i - 0.34 N.m

(3) Remove the ship cap before re-starting the unit.

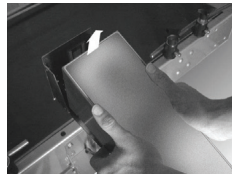
RELEASING THE AIR FLOW VENT

WARNING: **If the printer is being run for the first time since installation or re-mounting, the air flow vents must be released.**

There are two air flow vents in the C6000 and C6000(i), and one in the C3000 and C1000 that require releasing prior to initial power up. There is also a vent in a 2L base that needs to be released.

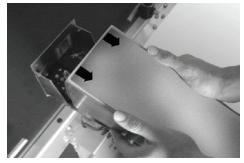
For the vent(s) on the header tank:

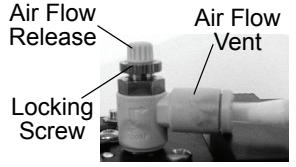
(1) Using a screwdriver, remove the four screws securing the control unit cover.

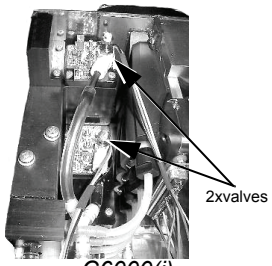


(2) Carefully raise the control unit cover and move back just enough to expose the header tank in the top left corner of the control unit.

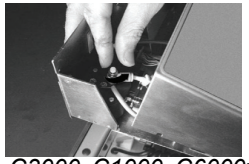
(3) The header tank air flow vent is a small plastic valve located on the top of the header tank.







C6000(i)

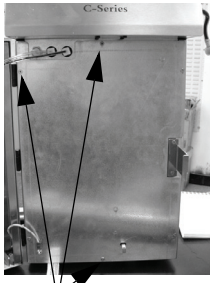


C3000, C1000, C6000v

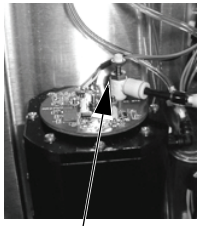
(4) Using thumb and forefinger, fully undo the metal locking ring surrounding the grey plastic air flow release, then fully open the air flow release. When complete, tighten the locking ring. Carefully slide the cover back in place and secure. Take care not to trap any wires or pipes.

For the vent in the 2 litre base unit:

(5) Open the base door and remove the panel cover.



Remove all securing screws to remove the panel cover.



Valve is located on top of the reservoir.

(6) Repeat step (4) for this valve.

REPLACING AN INK BOTTLE

CAUTION: *Do not pull on the pipes in the cap, when replacing the ink bottle.*

It is possible to fit either a 1 or 2 litre ink bottle.

If fitted, the beacon will flash to indicate that the ink bottle needs replacing.

(1) If installing the printer for the first time, there may be a piece of protective tubing over the ends of the probes. **Pull off this piece of tubing carefully - the probes are very sharp.** Check that both O-ring seals are present around the supply stems, otherwise air and ink leaks may occur.

(2) Discard the transit cap from the new ink bottle and place the bottle into the front of the unit.

(3) Push the air and ink probes into the correct holes in the ink bottle, puncturing the seals.

Note: *The probes have different diameters which must be aligned correctly with the holes in the bottle, otherwise damage can occur if the cap is forced.*

(4) Press the centre of the probe assembly firmly to ensure that both probes have pierced the seals.

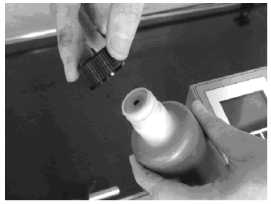
(5) Tighten the bottle cap (hand tight only). Arrange the air and ink tubes so that they cannot be trapped in the door mechanism.

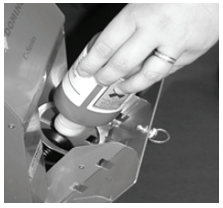
200ml Base

Note: *New printers are shipped with a protective tube over the septum, ensure this is removed prior to fitting the ink bottle.*

When the ink bottle is exhausted, printing will continue for a short while because of the small reserve of ink in the header tank. When the ink supply to the header tank runs low, the replenishment indicator on the base unit will flash. If it is empty, replace as follows:

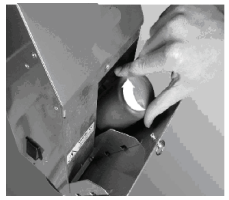
(1) Open the base door by pushing the catch toward the door and twisting 90º anticlockwise. Unscrew to remove the used ink bottle. Ensure the use by date on the new ink bottle has not expired and unscrew the protective cap from the bottle non-leak top.

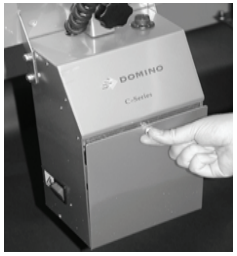




(2) Gently push the top of the bottle into the housing containing the steel puncture probe.

(3) When the ink bottle is located, apply a small downward pressure and twist the bottle in a clockwise direction until it tightens.





(4) Close the base unit door.

Note: *Discard any used or damaged ink bottles in accordance with local waste disposal legislation. Do not attempt to reuse used or damaged ink bottles.*

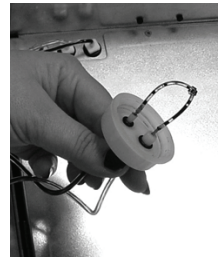
2 Litre Base

CAUTION: Do not to pull on the pipes in the cap, when replacing the ink bottle.

A warning light on the top of the base will flash to indicate that the ink bottle needs replacing. The light will flash slowly as the ink falls below the first level (bottle empty, up to 8hrs of printing time remaining). When the ink falls below the second level (ink chamber empty), the warning light will flash rapidly. When the printer screen shows Ink status out, there are 19 prints remaining before the printer will stop.

The ink cap is attached to the inside of the base unit by its two feed pipes (air in and ink out). Two metal probes pierce the seal in the ink bottle allowing an air-tight, ink-tight seal to be formed.

(1) If installing the printer for the first time, there may be a piece of protective tubing placed over the ends of the probes. **Pull off this piece of tubing carefully - the probes are very sharp.** Check that both "O" ring seals are present around the supply stems, otherwise air and ink leaks may occur.

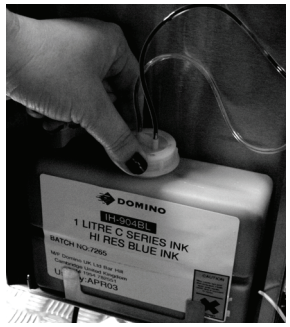


(2) Discard the transit cap from the new ink bottle and push the bottle into its slots in the door of the unit.

(3) Push the air and ink probes into the correct holes in the ink bottle, puncturing the seals. Notice that the probes have different diameters which must be aligned correctly with the holes in the bottle, otherwise damage will result if the cap is forced.

(4) Press the centre of the probe assembly firmly with the thumbs to ensure that both probes have pierced the seals.

(5) Tighten the bottle cap (hand tight only). Arrange the air and ink tubes so that they cannot be trapped in the door mechanism.

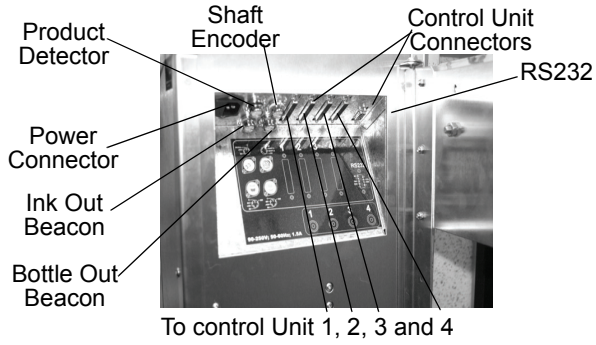


INTERCONNECTIONS

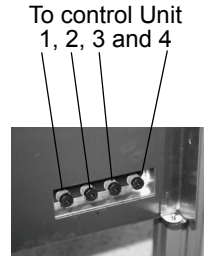
Base Unit

CAUTION: *Ensure that Control Unit connector 1 and ink connector 1 are connected to control unit 1 and so on.*

(1) The connections on the back of the control unit are for power, 4 x Control unit connections, 1 x product sensor, 1 x shaft encoder, 2 x beacons (1 for bottle out, 1 for ink out) and 1 x RS232 connection, there are also 4 x ink connections. The control unit and ink connections relate to the 4 control units that can be connected to the base. All connections should be checked and maintained to ensure that the unit remains in good working order.



Base Unit Connectors

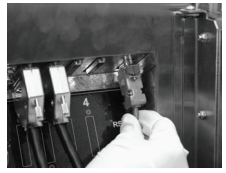


Base Unit Ink Connectors

(2) Connect the 25-way connector(s) from the control unit(s) to the base unit.

(3) Remove the blanking plug from the ink connectors and connect the ink tube(s) from the control unit(s) to the base unit.

(4) If required (e.g. for downloading messages), connect the RS232 connection. This only communicates to head 1, see "Options" on page 85 for communication to multiple heads.



(5) Connect the product sensor and shaft encoder.

(6) If used, connect the beacon(s).

(7) Power to the base unit is supplied via the connector on the rear and switched on via the illuminated switch on the side.

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Control Units

(1) The four connections on the back of the control unit are the power, ink, external sensor and ethernet connections. These connections should always be checked and maintained to ensure that the unit remains in good working order.

C6000(i), C6000v

C3000 & C1000

C6000(i), C6000v

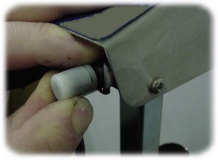
(2) The black power cable, from the base unit, is connected to the power connection port and is secured in position by two fixing screws. To unplug the connector ensure these screws are unfastened.

C3000 & C1000

(3) To connect the ink line, use the quick release (QR) connector on the end of the translucent plastic tube, running from the bottom rear of the base unit. The QR connector must be pushed into the female connection port on the back of the control unit head until it clicks into place.

C6000(i), C6000v

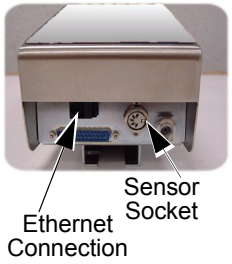
C3000 & C1000



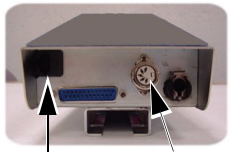
(4) To disconnect the ink line, push the locking plate on the side of the connection port. The connector will release with ease. The QR plug and connection port both contain spring loaded valves that automatically seal to prevent ink loss.

CAUTION: The ink line should always remain connected when the printers power is on, if disconnecting the ink line ensure the power is turned off.

(5) The power is supplied via a connection on the bottom of the base unit. The power cable should be connected to a mains supply.



C6000(i), C6000v



C3000 & C1000

(6) The Ethernet connection is required if communicating using TCP/IP protocol.

(7) The Multi-head Base Unit supplies all control units fitted, with the print-go and shaft encoder signals.

(8) On 2L and 200ml bases only. The product sensor is required for the C6000(i), C6000v, C3000X and C1000X which connects into the sensor 5 pin DIN socket.

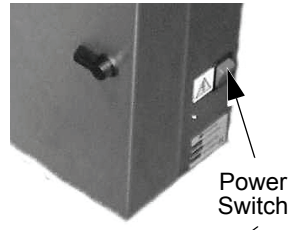
Powering Up

When the unit is correctly connected, the power can be switched on.

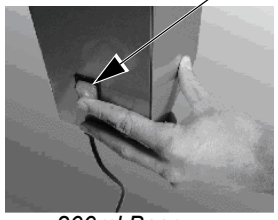
WARNING: **If the printer is being run for the first time since installation or re-mounting, the air flow vents must be released - see page 37.**

Note: *If connecting for the first time, it may take a few minutes for the ink to transfer from the bottle into the chamber.*

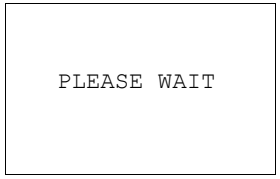
(1) To power on the printer, press the power switch on the bottom/top right side of the unit (as shown). This switch will illuminate to indicate that power is on.



2 Litre Base

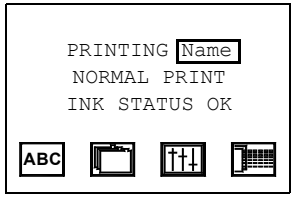


200ml Base



(2) The printer will power up. The LCD screen will flash twice and the screen will prompt "**Please wait**" for a short while followed by "**Initialising**".

(3) After a short wait the screen shown will be displayed. Where "Name" is seen, the currently selected message name is displayed. Before proceeding to the printing stage, it is recommended that the **prime** function is carried out to prime the nozzle plate with ink, clearing any dust from the print head.



PRIMING THE PRINT HEAD(S)

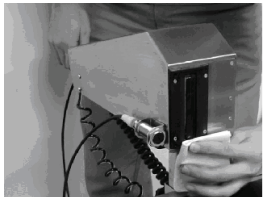
It is good practice to prime the control unit(s) at least once a day. It is recommended that this is carried out as soon as the printer has been powered up at the beginning of a shift to prevent degradation in the print quality.

Note: *To run remote units for the first time: Power up the unit until ink ok is displayed and then disconnect the ink line. Purge the unit until the head reports ink low. Close the vent valves in the print head and reconnect the ink line. The base will now pump ink through the system. Turn the unit off when a constant stream of ink is coming from the print face. Release the vent valves and turn unit on.*

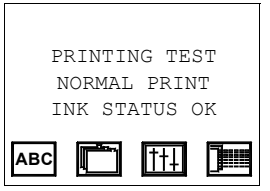
CAUTION: *Do not wipe across the face of the nozzle plate.*

Note: *Illustrations show C6000.*

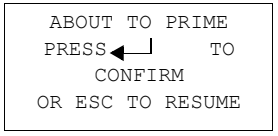
(1) Hold a cleaning wipe just below the base of the nozzle plate.



(2) Press the prime key on the LCD screen. This will purge a small amount of ink through the nozzle plate so it is primed and ready to print.

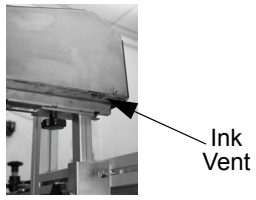


(3) Before any ink is expelled from the nozzle plate, a screen prompt will appear on the LCD asking for confirmation of the prime function. Press **enter** ↵ to confirm the action.



(4) Continue holding the cleaning wipe in position. The print head will expel a small amount of ink whilst making a vibrating sound for approximately five seconds. Only remove the cleaning wipe when all the ink has been soaked up. The control unit is now primed and ready to print. Repeat the procedure if necessary.

Note: *In the case of persistent air in the ink system, it is possible to intermittently plug the ink vent on the bottom of the printer with a finger during the prime procedure. Put finger over vent hole for maximum 1 second only. Do not keep finger over the ink vent for the duration of the prime procedure.*



C6000v Priming

(1) Ensure the print head face is back in its vertical position. Prime as with other units, catching the ink in a suitable container or cloth.

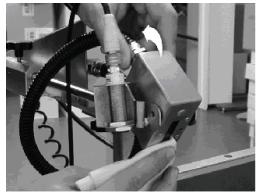
(2) To remove spots of ink from the print face, use a swab and gently blot to remove the ink off the print face.

PRIMING A ROTATED HEAD - C3000X AND C1000X ONLY

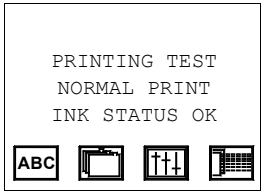
When a remote head is in the printing down position, prime as follows:

CAUTION: *Do not wipe across the face of the nozzle plate.*

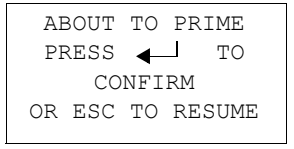
(1) Slacken the bracket screws and pull the head back at a slight angle as shown. Hold a cleaning wipe just below the base of the nozzle plate as shown.



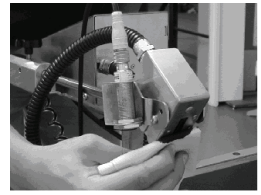
(2) Press the **prime** key on the LCD screen. This will purge a small amount of ink through the nozzle plate so it is primed and ready to print.



(3) Before any ink is expelled from the nozzle plate, a screen prompt will appear on the LCD asking for confirmation of the prime function. Press **enter** to confirm the action.



(4) Continue holding the cleaning wipe in position. The print head will expel a small amount of ink whilst making a vibrating sound for approximately five seconds. Only remove the cleaning wipe when all the ink has been soaked up.



(5) Move the head back to the printing down position and tighten the bracket. Repeat the procedure if necessary.

AUTO PRIME

WARNING: **Ensure that any purged ink is collected using a box guide with ink drip tray and collection sponge.**

Note: *The Auto Prime function is controlled using Connect software for the C6000MF. Please refer to the Connect manual.*

Number of Prints

It is possible to set the printer to automatically prime the print head after a set number of prints. The printer will expel a small amount of ink from the nozzle plate after the prints.

Set the auto prime function as follows:

Press the Options  icon and select **auto prime.**

Note: *This function is password protected.*

Enter the number of prints after which the printer will auto prime. This is up to a maximum of 32,000 prints and 0 is disabled.

The printer will then auto prime the nozzle after this amount of prints.

Duration

It is also possible to set the duration of the purge (the length of time the purge pump is on), this can be set between 0.08 and 9.99 seconds.

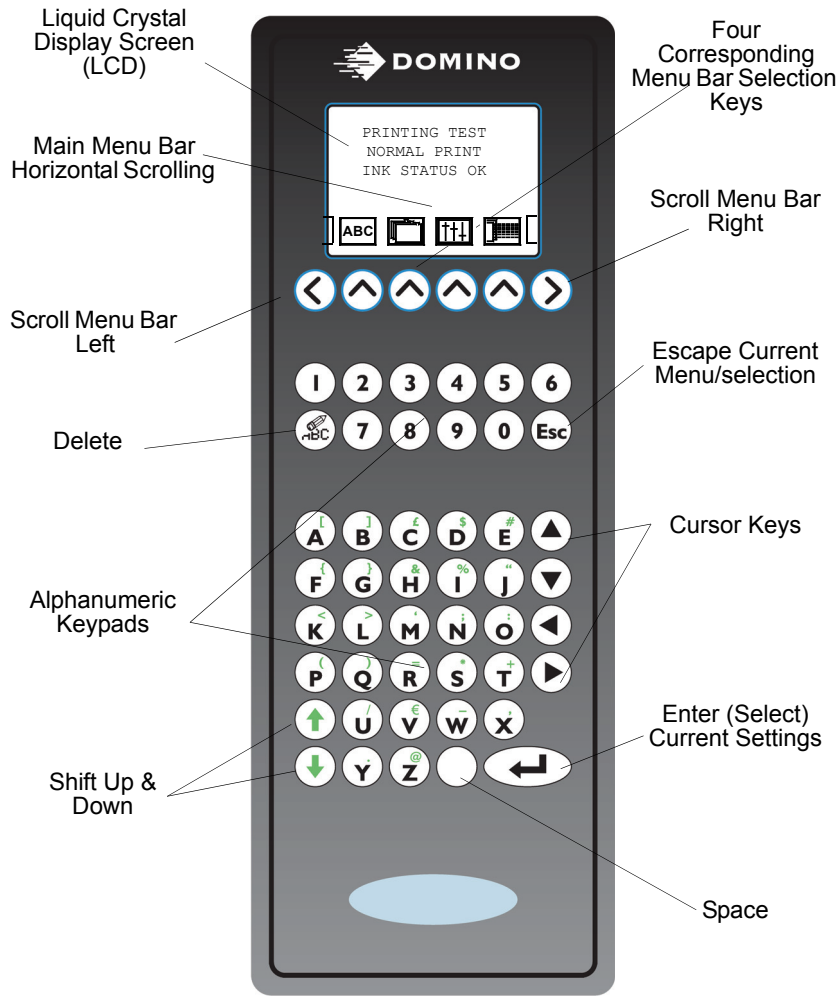
Timed

Instead, or as well as setting the number of prints, it is possible to select the time in minutes after which the purge occurs, up to a maximum of 32,000 minutes (0 is disabled).

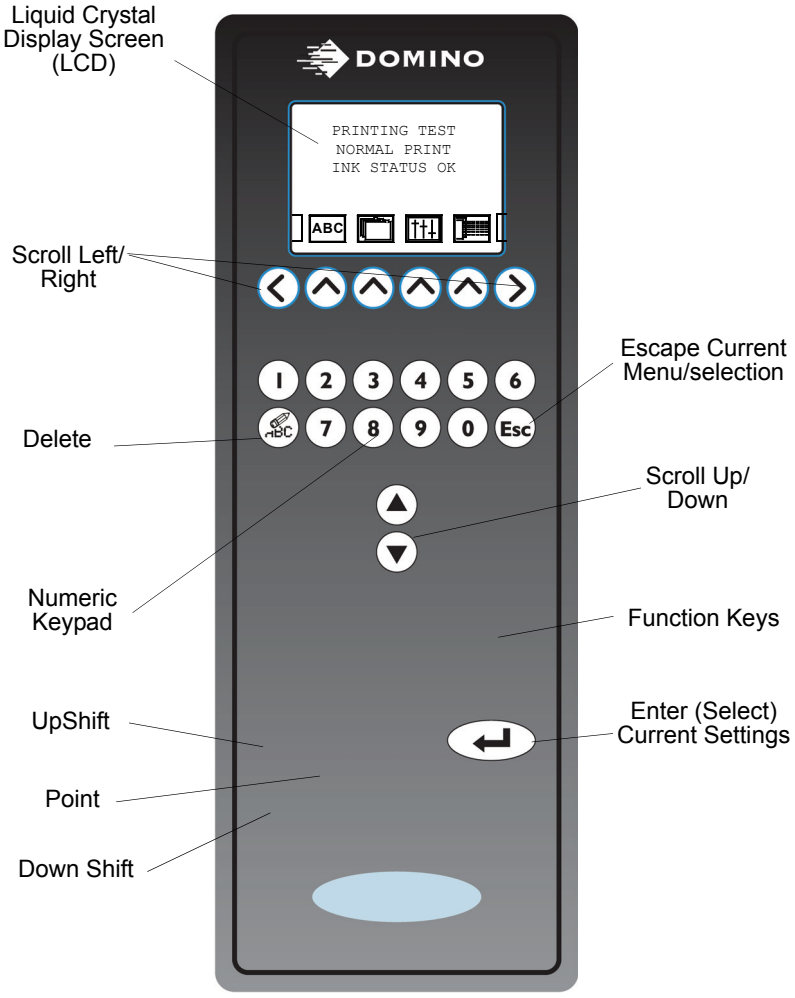
Event Driven

An external source can also give the printer a signal to auto prime, this is done in conjunction with the above settings and is set to either Enable or Disable.

CONTROL UNIT KEYPAD LAYOUT

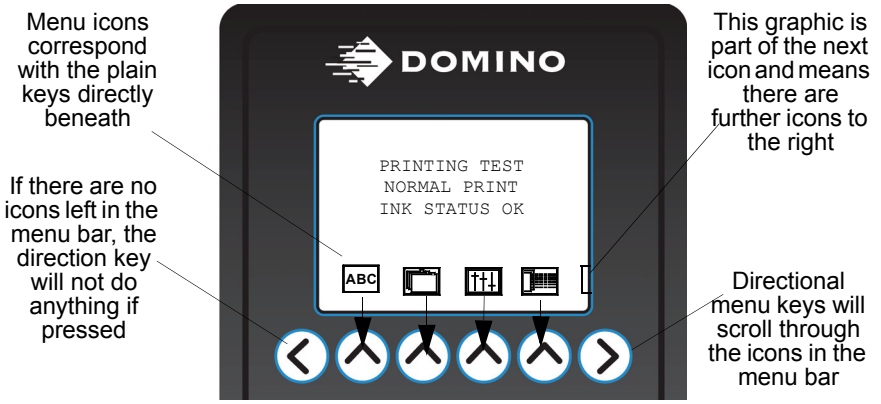


Standard Keypad Layout



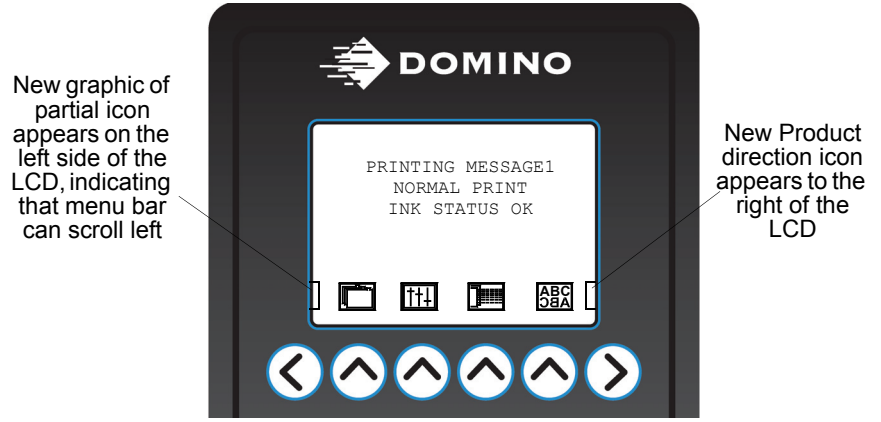
MF Keypad Layout

Basic Interface Controls



The main menu bar is shown above. There are never more then four icons on display at one time. These icons correspond directly with the plain keys beneath them. For example if the plain key on the far right is pressed the **prime** icon would be selected.

If the operator presses the left arrow key nothing will happen as there are no icons in this direction. If the right arrow key is pressed once, the menu bar will scroll across by one icon. As a result the **print which message?** icon will disappear and the **product direction** icon is displayed.



Functions and Menus

When the basic operation of the control unit is understood, the operator may commence programming instructions and commands into the printer. It is recommended to read through the different menus and familiarise with all icons.

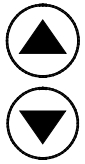
Note: *When using the directional keys to scroll through the menu bar, if the directional arrow key is pressed and held, then the menu will continue to scroll until the operator releases the key or the end of the menu bar is reached.*

Keypad Functions

The control unit communicates via an array of various keypad and LCD functions. A brief explanation of these functions is as follows.

CONTROL UNIT, FUNCTION KEYS	Name & Description
	**The enter key** is used to execute commands like saving changes to a message or confirming the selection of certain commands.
	**The escape key** is used when a command or icon that has been selected is not required or needs to be cancelled without making further selections.
	**The delete key** is mainly used in the message editor to erase text, graphics or spaces. It can also be used to delete characters when entering information into other menus and functions.
	**The up shift key** can be combined with delete or the alphanumeric keys, to give greater options for these keys. For example if used with the alphanumeric keys, the small green character in the top right corner of the keys are used.
	**The down shift key** is combined with other keys to give alternate options with various keys. For example, when down shift is pressed simultaneously with a letter key, it will create a lower case character. Rather than the default upper case.
	**The cursor keys** control the movement of the flashing cursor block in various option screens, for example when editing text or setting the clock. They can also be combined with the shift keys in the message editor.
	**The space key** is used to add spaces between text and attributes when editing or creating a new message.

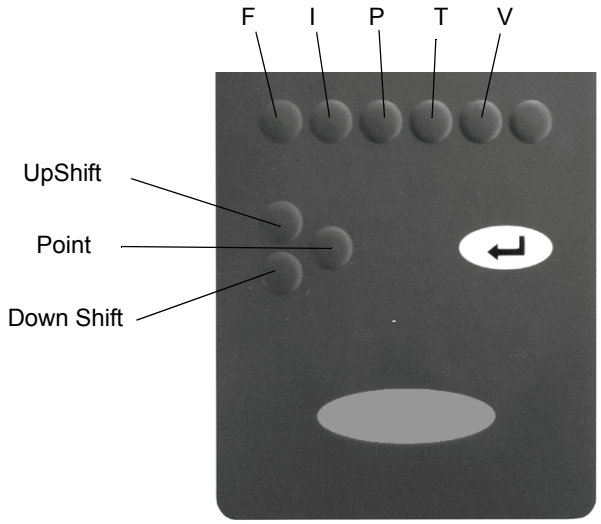
Function Keys - C6000 MF Only

CONTROL UNIT, FUNCTION KEYS	Name & Description
	**The enter key** is used to execute commands like saving changes to a message or confirming the selection of certain commands.
	**The escape key** is used when a command or icon that has been selected is not required or needs to be cancelled without making further selections.
	**The delete key** is used to delete messages from the memory, or editing information.
	**The cursor keys** control the movement of the flashing cursor block in various option screens, for example when editing the IP address.

LCD Screen Icons - C6000 MF Only

ROOT LEVEL, MENU BAR ICONS	NAME & DESCRIPTION
	It is recommended that the **Prime print head** is performed every time the printer is started or when the nozzle plate requires cleaning.
	**Enable user password**, the operator can restrict access to the control unit by installing a numeric user password.
	**Wipe** completely erases the control unit memory, this icon will delete all saved messages and downloaded logos. The printer will revert to its default factory settings.
	**External Setup,** used to setup parameters of external variables - preamble, postamble & timeout.
	**Options,** allows the user to enable external settings, such as IP Address.

The following keys are used to perform specific functions, usually in conjunction with the downshift key.



C6000MFSpecial Function Keys

Downshift + F	Fill the ink system. If ink system is already full, will report Ink system filled
Downshift + I	View the IP setting details. To change the IP address, see below.
Downshift + P	Enable/Disable the password.
T	To print a test message, hold the T button in and power the printer on.
V	View current software issue details

To change the IP address, use the scroll left/right buttons to locate the Options icon , select by pressing the button below the icon. Using the Up/Down scroll buttons, scroll the cursor to IP Settings, press enter to select the IP setting. Use the delete key to remove the old value and replace using the numeric keys – to enter a decimal point, use the upshift and Point keys. Once complete, scroll to OK and press the enter key.

LCD Screen Icons

ROOT LEVEL, MENU BAR ICONS	NAME & DESCRIPTION
	**Print which message?**, select a saved message to be printed from the control unit's memory.
	**Edit or create a message?**, to format a new message, update or edit an old message.
	**Parameters** of the message can be altered, e.g. print speed, DPI, delay, adjusting the bar codes or copying current message parameters as the default settings.
	**Prime print head**, it is recommended the prime function is performed every time the printer is started or any time the nozzle plate requires cleaning.
	**Product direction**, depending on which side of the conveyor the printer is mounted, will determine whether the message is printed from left to right or right to left.
	**Enter new time,** can be adjusted at any point. Details of time, date, month and day can be entered for printing.
	**Rollover time**, the default rollover time is set to midnight. This is when the system clock will rollover on to a new day. The rollover function can be changed to suit.
	**Enter number of shifts**, the printer can keep a track of the shifts during the running time of the production line, this icon allows the selection of between 1-4 different shifts.

ROOT LEVEL, MENU BAR ICONS	NAME & DESCRIPTION
	**Box count**, this icon allows the operator to record the number of products passing on the production line.
	**Choose language**, allows the operator to select from the list of operating languages.
	**Options screen**, allows the operator to enable external peripherals, e.g. a shaft encoder or external photo cell.
	**Enable user password**, the operator can restrict access to the control unit by installing a user password so that the settings cannot be changed.
	**Wipe**, to completely erase the control unit memory, this icon will delete all saved messages and downloaded logos. The printer will revert to its default factory settings.
	**Orientation**, to invert and reverse the message. The print direction is automatically changed.
	**Ink Cost Calculator,** used to calculate the cost and amount of ink used for a specified message.
	**Variables,** add either a prompted or external variable into a message.
	**External Setup,** used to setup parameters of external variables - preamble, postamble & timeout.
	**Shaft Encoder Sensing,** measures S/E pulses to ensure not being overdriven for current DPI.

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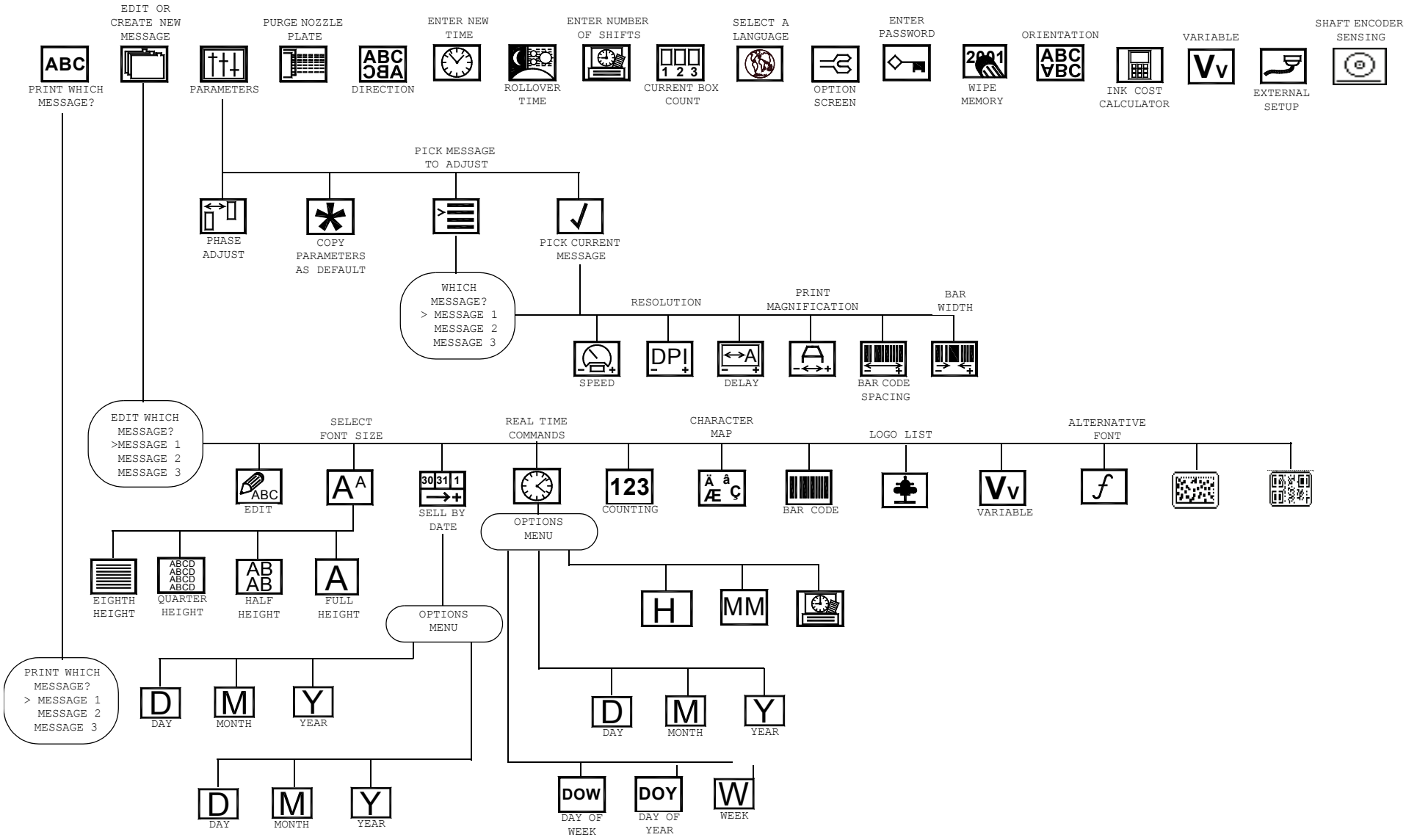
Interface Map



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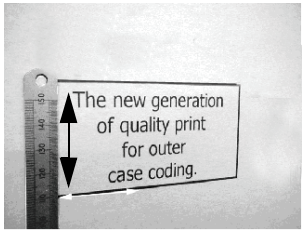
SETTING A PRINT JOB

When setting a print job, it is good practice to prepare the site – ensuring that the printer and conveyor are set correctly. The following steps outline this set up procedure:

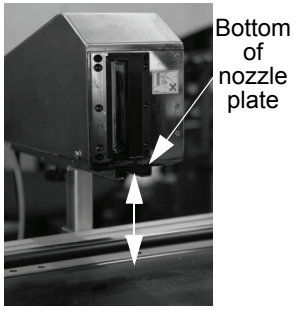
A Multi-head Base Unit should be mounted in a suitable position to enable the control units to be mounted within 3 metres of the base. Each print head can be set up as follows:

(1) Calculate exactly where the message is to be printed on the surface of the substrate. For this example, the message is printed on the box.

(2) To calculate how high to set the print head, place the print surface (box) onto the conveyor next to the control unit, measure from the lowest point of the intended message to the conveyor surface. This measurement will be where the bottom of the nozzle plate will need to be set.

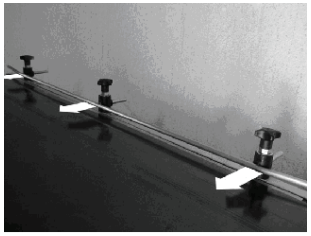


(3) Measure from the bottom of the nozzle plate to the conveyor. Ensure this measurement matches the distance from step (2). If not, loosen the black plastic fixing knob on the front of the base unit and adjust to the desired height.

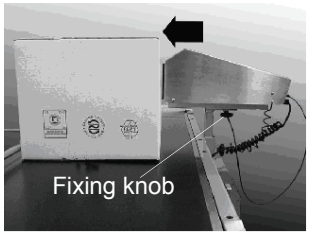


(4) When the control unit is at the required height, tighten the fixing knob.

(5) When the vertical height of the unit is set, the conveyor mounted guide rails should be positioned so the box is not too far from the print head. At this point the distance from the control unit front to the box can be approximated. It will be adjusted more accurately in the next step.

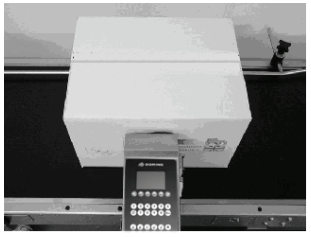


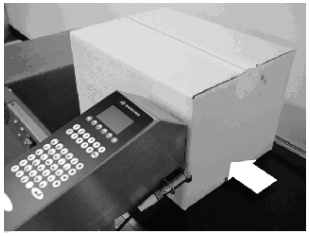
(6) To accurately adjust the horizontal distance between the box and the unit, loosen the black plastic fixing knob beneath the control unit, then move the unit forward until it sits flush against the surface of the box. **Do not press too hard, the surfaces should be as close as possible without touching.**



(7) When the horizontal distance is set, ensure there is adequate tolerance for the box to move past the print head without getting stuck or misaligned. If not, move the control unit back very slightly.

(8) Repeat steps (1) to (7) above for all control units (print heads).





(9) When the set up is complete, the printer should be switched on and tested. Run a test box on the conveyor, past the print head(s) to check that the message is printing in the required location. The vertical and horizontal adjustments may need to be fine tuned. If the message is printing too close to the edge of the box then this must be adjusted using the delay function . See **Adjusting Parameters** for further information, for the C6000MF printer this is done via the Connect software, refer to the Connect manual.

PRINTING A DEFAULT TEST MESSAGE

The printer can print a test message to check print quality, as follows:

(1) Turn off the printer.

(2) Hold down the letter 'T' button and switch on the printer.

(3) Keep the 'T' button depressed until the screen shows that initialising is complete. During this time the test message will be loaded.

(4) Print the test message by passing a piece of card in front of the product detector and printer. Check the test message is clear and complete. If any nozzles appear blocked, refer to the section "Priming the print head".

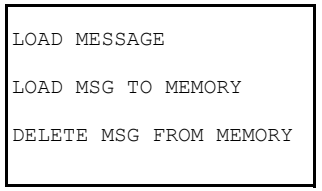
It is also possible to print the test message by selecting the message called "TEST" from the **print which message** menu.

PRINTING A SAVED MESSAGE

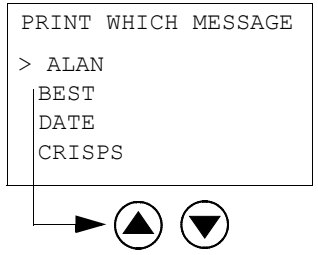
The printer can quickly switch between saved messages.

The message store can be viewed and messages uploaded by selecting the **print which message?** ABC icon. To use this function:

(1) Select the **print which message?** ABC icon on the main menu bar. The following sub menu screen is displayed.

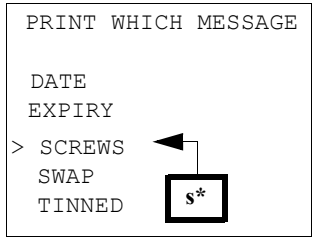


(2) The menu options can be selected using the cursor keys to scroll the selection arrow up or down and the enter key.



Load Message: The screen will display the saved messages list in alphanumeric order. The list can be scrolled up or down using the cursor keys.

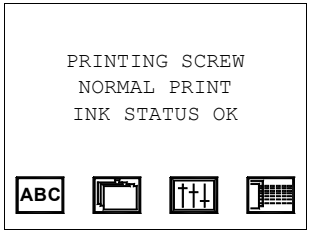
Alternatively, if the list is long, to save scrolling through all the messages with the up down cursors, the operator can press the first letter of a message name. This will cause the **>** cursor to move directly to the first message beginning with that letter or number (s in this example), this character is retained so the second character entered searches on the second character of the message names,i.e.



SCREWS S would point to SCREWS
SWAP W would point to SWAP.

The search string is cleared if the UP or DOWN arrows are pressed. When on the correct message, press **enter** to confirm the upload.

(3) When **enter** is pressed, the screen will return to the main menu and the appropriate message name will appear on the screen prompt to confirm that it has been uploaded. The message is now ready to be printed.



Load msg to memory: This also displays the saved messages in alphanumeric order but, on selection it loads the message into memory to allow for fast message changeover. It does not affect the currently printing message. These messages in memory are selected from an external source.

Delete msg from memory: This displays the current list of messages that are loaded into memory and enables the user to delete messages from the memory list. This does not delete the message from the printer.

DELETING A SAVED MESSAGE

To delete a message, select the **edit which message?** menu, scroll the message list as described in step (2) on page 69 and select a saved message to erase. When the > cursor is on the appropriate message press the **delete** key and the screen prompt opposite is displayed. Press **enter** to confirm, or **escape** to undo, this action.

Note: *It is not possible to delete the currently printing message.*

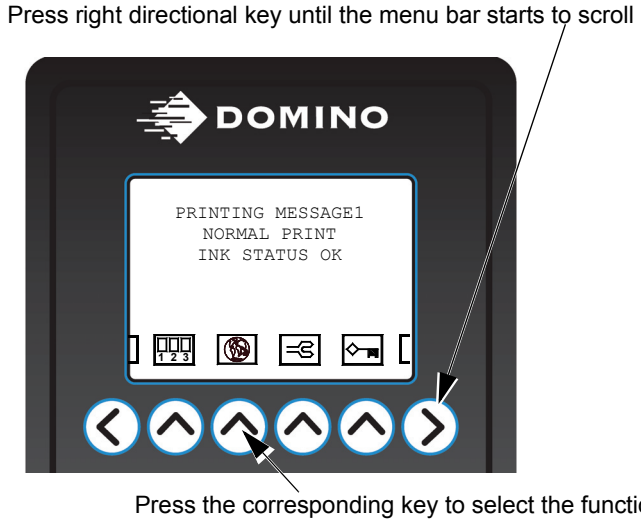
```
ERASE
YOU ARE ABOUT TO
ERASE MESSAGE
SCREW
PLEASE CONFIRM
```

PROGRAMMING THE PRINTER

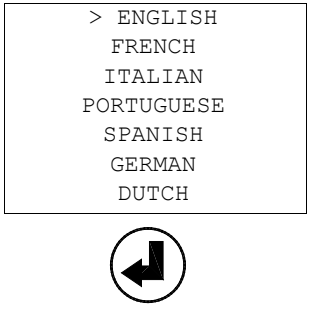
SELECTING A LANGUAGE

The printer can communicate with the operator in one of several resident languages. Select a new operating language as follows:

(1) Scroll through the menu bar using the right directional key and select the **global map** icon. The arrow key can be pressed continuously to scroll through the menu quicker.



(2) When selected, a list of languages will appear on the LCD, use the up and down cursor keys to scroll through the list.



(3) When the appropriate language has been selected, press the **enter** key to complete the command. All the menus and options will then operate in the chosen language.

SETTING THE CLOCK

This function determines the clock time used to run some of its real time functions, e.g. shift codes, sell by dates and date/time prints.

Note: *When the current time is set, it continues to operate even when the control unit has been switched off. The only time the clock will need to be reset is if the control unit's memory has been wiped or if adjustments for daylight saving are made.*

The time, date and day are held in the systems memory in the following format:

The top line is a key for the current format the bottom contains the time/date/day data.

```
ENTER NEW TIME....
 HR:MI DT/MO/YR D
15 : 28  10/11/00 5
```

HR:MI is the current time in hours and minutes, displayed in 24 hour format. In the example, the clock reads 15:28 (3:28pm).

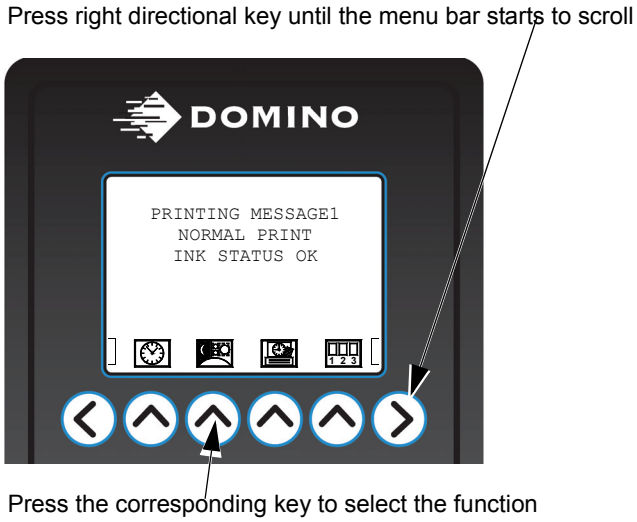
DT/MO/YR is the date/month/year. The example, reads 10/11/00 (10th of November 2000).

D is the day of week. The printer works on 7 day cycle, as a default, Monday is day 1. So Monday = 1, Tuesday = 2 Wednesday = 3, etc. Therefore, in the example above day 5 would be Friday.

When inputting the year format, it should be entered as a two unit figure. For example to enter 2000 as the year, enter 00 as the value. 2001, 2002, 2003 would be 01, 02, 03, etc.

Amend the clock function, as follows:

(1) Scroll through the menu bar functions and select the **set clock** icon.



(2) The Clock Options submenu is displayed. Select the time option by using the up down cursor keys and press **enter**.

```
    CLOCK OPTIONS

> FIRST WOY
  TIME
```

(3) A flashing cursor block at the beginning of the hours format can be moved left or right by pressing the cursor arrows on the key pad.

```
 HR:MI  DT/MO/YR D
■: 28   10/12/99 5
```

Flashing block cursor can scroll across time/date/day format enabling operator to edit the clock time.

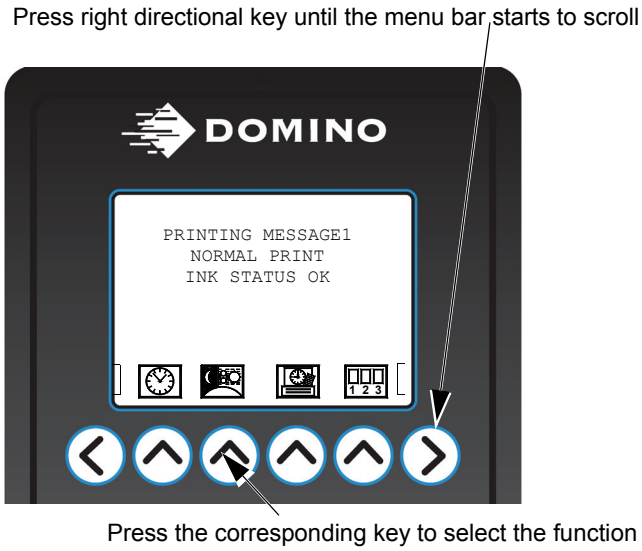
(4) To re-adjust any of the values, place the cursor over the character to be adjusted and overtype the new value, when all changes are completed press **enter**.

Note: *Values that are outside the parameters of the 24 hour clock or calendar month, are not accepted.*

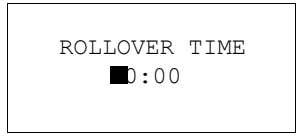
ROLLOVER TIME

The default working day ends and starts at midnight. This is when the control unit will rollover to the next working day. This value can be adjusted as follows:

(1) Scroll through the main menu bar icons using the directional arrow keys and select the **rollover** icon.



(2) When the icon has been selected, the following will be displayed



The flashing cursor block on the first character can be moved using the left and right cursor arrows.

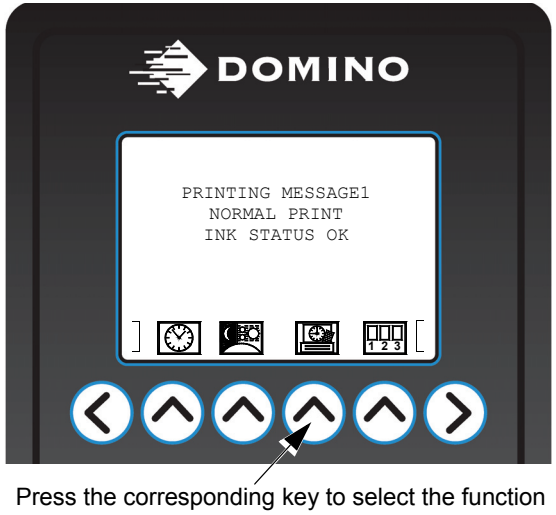
Move the cursor over the character to be changed and overtype with the required rollover time, e.g. **06:00** if six AM is the required rollover time. Press **enter** to confirm the changes.

ENTER NUMBER OF SHIFTS

Up to four production shifts can be programmed, and can be given code letters, for example shifts **A, B, C, D**.

These shift codes are then split into the working hours of the production line. The printer can be set to print out the shift automatically. See also formatting messages on page 88. To enable the print out of different shifts, the times and shift codes must be programmed. Enter the shift codes and times as follows:

(1) Scroll through the main menu bar on the LCD with the directional arrow keys and select the **shift code** icon



(2) A prompt asking how many shifts are required is displayed, in this case select 3, press enter.

```
ENTER NUMBER OF
SHIFTS 2, 3 OR 4
```

(3) A flashing cursor block will be seen at the top left of the screen under the **A** character. Decide which code letters are to be designated to the shifts. For this example there are 3 shifts

```
SHIFT CODES
 A      00:00
 A      00:00
 A      00:00
```

Default shift code screen

(4) Using the four cursor keys, scroll around the shift code screen over-typing the default letters. In this example, shift A starts at 6am and finishes at 10am. Shift B starts at 10am and finishes at 2pm. Shift C, the final shift, starts at 2pm and finishes at 6am. Press the **enter** key to save the shift codes and times.

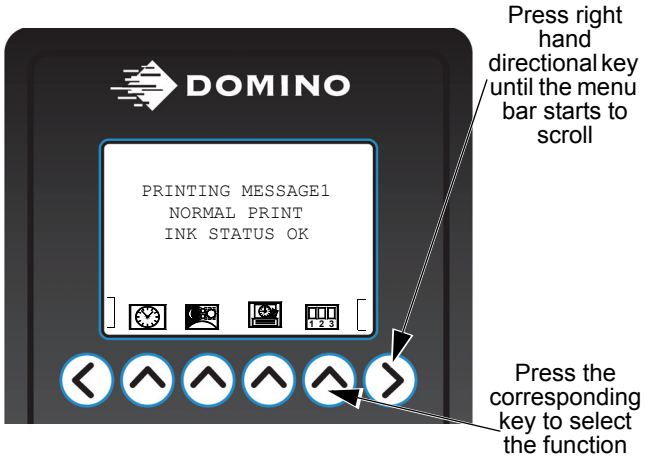
```
SHIFT CODES
A      06:00
B      10:00
C      14:00
```

Newly entered shift codes

CHECKING CURRENT BOX COUNT

The printer is capable of counting the number of boxes that have passed the sensor. The box count function can be zeroed at any point and will count in single increments from zero. Check the box count as follows:

(1) Scroll through the main menu bar on the LCD with the directional arrow keys and select the **current box count** icon.



(2) The current box count figure will be displayed, in this example 99. Below the box count number is "Do you wish to zero this value?" If the value needs to be reset back to zero, press the **enter** key. If the current value is still required, press **escape** to return to the main menu.

```
CURRENT BOX COUNT IS
        99
   DO YOU WISH TO
   ZERO THIS VALUE
```

Note: *It is possible to print box counts and pallet counts. These functions are set up under the* ***counting*** *icon which is located under the* ***edit which message?*** *menu.*

(3) On pressing enter, the following screen is displayed, press enter to zero the box count or press Esc to resume the count.

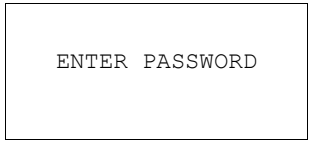
```
CURRENT BOX COUNT IS
        99
   DO YOU WISH TO
   ZERO THIS VALUE
PRESS ↵    TO CONFIRM
  OR ESC TO RESUME
```

ERASING THE CONTROL UNIT MEMORY

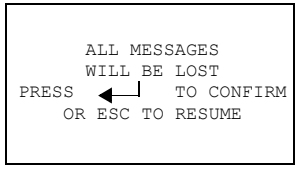
To erase the control unit memory, follow the steps below:

CAUTION: ***Do not*** *use this function unless the whole control unit memory needs to be wiped. All saved messages, logos and saved settings will be wiped and replaced with the default settings.*

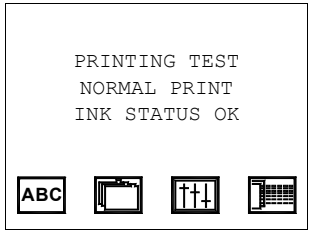
(1) Enter the **clear all** menu, for extra security, a screen will prompt for the re-entry of the user password (numeric only for C6000MF). Once the password has been entered, press the **enter** key to confirm.



(2) Press **enter** to confirm or **escape** to return to the main menu.
After the memory wipe has commenced the screen will indicate that the system is initialising. After a few seconds the memory will be reset to the initial factory settings.



(3) The screen will indicate that the test message is ready to print. For new C6000MF printers this will be the default message.

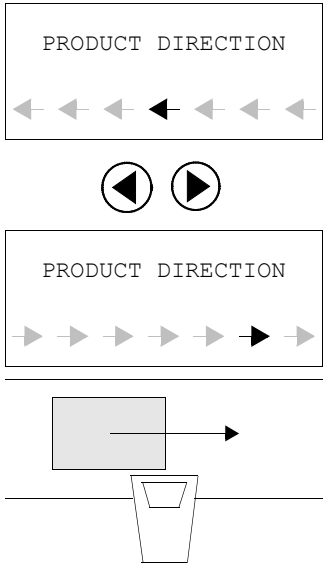


PRINT DIRECTION

The print direction default is from **right to left**.

Depending on which side of the conveyor each control unit is mounted, will dictate the direction that the print surface is moving and could change to left to right, causing the message to be printed in reverse.

If required, select the **print direction** icon for the affected control unit(s). The sample screen below will be displayed. The animated directional arrow indicates the direction of the print. If the direction needs to be altered then press the right hand directional key. When pressed, the animated arrow will change direction. Press **enter** to confirm the changes. The screen will change to show "INITIALISING" then returns to the main screen.

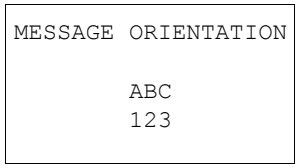


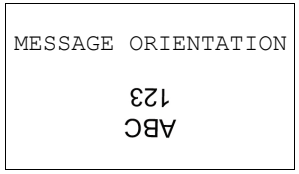
When the direction of the conveyor belt is running from left to right then product direction function will need to be altered as shown above

ORIENTATION

Orientation allows the operator to invert and reverse a message.

The up and down cursor keys are used to control the orientation of the message. The small ABC/123 graphic shows the orientation selected, once selected press **enter** to confirm. The LCD will display that the unit is initialising the changes, the main display will show the words "Inverted Print" instead of the usual "Normal Print".





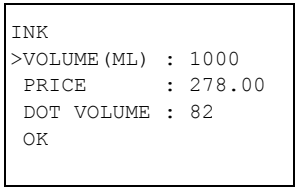
INK COST CALCULATOR

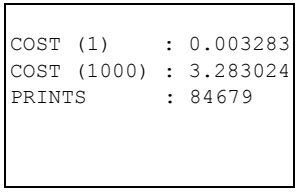
This function calculates the cost and amount of ink used for a selected message. It will also estimate the amount of prints achievable for the given quantity of ink.

Enter in the volume of ink purchased (e.g. 1000ml) and the price paid (example here 278.00), then dot volume (e.g., 82pl).

Select the message from the list shown and press Enter, the screen will change to show the cost of ink for one print of the selected message, the cost for 1000 prints and the amount of prints for the quantity of ink.

Note: *This is an indication only and does not take into consideration ink used for priming.*





VARIABLES

This function allows the insertion of a variable into a message. There are two types of variable; prompted and external.

Prompted Variable

A prompted variable is inserted into a message and will prompt the operator for information when that message is selected for print.

Enter a prompted variable as follows:

Select the variable Icon Vv from the main menu, then select new and press enter. Select Prompted Variable.

```
PROMPTED VARIABLE
>NAME:
 LENGTH:
 PROMPT:
```

On this screen, enter the name required for the variable, the number of characters for the information required and the prompt required, e.g. “enter number of boxes left.”

Therefore, if a prompted variable is setup with Name: “boxes”, Length: “3” and Prompt: “Boxes remaining”, if this prompt is inserted into a message, when the message is selected for printing, the prompt will appear, the user can then enter the number of boxes, up to 999.

```
Boxes remaining : [  }
```

External Variable

A variable can also be inserted into a message from an external source, i.e. a check weigher, bar code scanner, etc.

Note: This information has to be sent to the printer prior to the print.

Enter an external variable as follows:

Select the Variable icon Vv from the main menu, then select new and press enter. Select External Variable.

```
EXTERNAL VARIABLE
>NAME:
 LENGTH:
 OFFSET:
```

On this screen, enter the name required for the variable, the number of characters for the information, the offset - this is the amount of characters to offset by, e.g.

Information string is 12345abcde, if a length of 2 and an offset of 5 is entered then the variable information would be ab, as the offset ignores the first 5 characters and the length is 2.

Note: The External Var Params must be configured via External Setup, see page 83

External Setup

Note: External setup is password protected.

When using external variables, it is necessary to set the parameters which enable the printer to use the correct part of the information.

Set these parameters as follows:

Select External Setup Icon from the main menu. Select External Var Params and press enter.

```
EXTERNAL VAR PARAMS
>PREAMBLE:
 POSTAMBLE:
 TIMEOUT:
 ENABLE:
 PORT:
 PORT NUMBER:
 OK
```

Preamble is the character required to indicate the start of the information, e.g. <STX>.

Postamble is the character required to indicate the end of the information, e.g. <ETX>.

Timeout is the number of characters after which the printer will stop looking for a postamble. After this, the information will have to be re-sent.

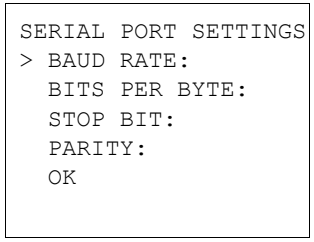
Enable must be set to TRUE to communicate externally. If set to FALSE, it will only communicate using the C-Series protocol and no variables can be acquired.

Port can be set to either TCP/IP or RS232. To use this, Enable must be set to True.

Port number greater than 3001 to avoid conflict with Connect. This allows Connect and another device to communicate with printer over TCP/IP. See "Options" on page 85 for backward compatibility.

The unused port can still be used to communicate with either Apprentice or Connect by selecting Enable as True and Port as RS232, this will enable external data to enter via the RS232 port leaving communications with Connect or Apprentice via TCP/IP. It is also possible to communicate to Apprentice via the RS232 (Connect cannot communicate via RS232) by setting the port to TCP/IP, this means that external data is via TCP/IP and communications to Apprentice is via RS232.

The Serial port settings can also be set within the External Setup menu. To do this, select Serial Port Settings.



OPTIONS

Message Revert

When printing a random system - where an external device selects the message e.g. bar code scanner, PC, etc. - the revert message can be set so that a default message is selected and printed when the external device does not select the message.

The revert message can be selected from a list that is displayed when 'Revert Back' is enabled.

Communications

This takes you to a sub menu that gives the user the following options:

Action Comms

Normally enabled. When disabled the printer will not respond to control characters from an external source.

Echo Data

Normally disabled. When enabled using the Multi-head Base control characters are echoed out of the serial port.

Satellite Mode

If enabled allows the controller to change a message on another printer through the serial link. Multi-head Base only.

Switches

This takes the user to a sub menu:

Shaft Encoder

A shaft encoder can be fitted to a production line, it's rotation follows the speed of the line, ensuring that the print speed changes accordingly.

For a Multi-head Base, the shaft encoder is plugged into the rear of the base unit where the signal is then sent to all control units. For a 2 Litre or 200ml Base the Shaft Encoder is plugged into the ACB.

At each control unit, the shaft encoder is enabled via the Options menu. To set the printer to communicate with a shaft encoder, select the Options menu  and select Shaft Encoder. Toggle between *Enabled* and *Disabled* using the cursor keys.

Shaft Encoder Test

(1) To check if shaft encoder is overdriven. When a key is pressed this will cause the printer to count pulses for a given time.

CAUTION: DO NOT trigger the photocell during this test.

The printer will then respond if the conveyor speed is ok or not, it will also respond if no pulses were received.

```
SPEED TEST

ENSURE SHAFT ENCODER
IS CONNECTED AND
SPINNING

PRESS ANY KEY
TO CONTINUE
```

Screen Saver

This function, when enabled, will automatically turn the display backlight off when the printer is not in use.

To enable the screen saver, select the Options menu and select Screen Saver. Toggle between *Enabled* and *Disabled* using the cursor keys.

Acknowledgement

This take you to a sub menu:

Last Raster RS232 The printer will send an acknowledge character to an RS232 device when the last raster has been printed.

Last Raster TCP/IP In the same way as the Last Raster RS232, the printer will send an acknowledgement character to an ethernet device when the last raster has been printed.

New Data RS232 The printer will send an acknowledge character when the system is ready to receive fresh data from an RS232 device.

New Data TCP/IP In the same way as the New Data RS232, the printer will send an acknowledge character when it is ready to receive fresh data.

Record Change

The unit records each piece of changing information of the currently printing message to a file that can be retrieved using Connect. It records the time and date, the action and all the changing information.

Bottle Out

Used with the Multi-head Base only this will allow the bottle out to be communicated to Connect.

Extra Port

Normally enabled. If disabled removes the port number option from external variable setup and fixes this to 3001. Only needed for backward compatibility.

Retrieve Mode

This is normally disabled. When enabled changes the functionality of the print which message icon. See Connect Manual for more details.

Sensor

A sensor can be fitted to the production line to give a print-go signal when a product passes in front of the sensor.

The recommended method for using a sensor to detect products with the Multi-head Base is a single sensor plugged into the base unit. The signal is then sent to all the control units attached. Alternatively, a sensor can be plugged into each of the control units.

CAUTION: *For Multi-head Base - do not plug a sensor into both the base and the control unit(s) otherwise it will cause the units to print incorrectly.*

Notes: *(1)* *For the Multi-head Base, this must be set to Enabled (for external).*

(2) *It is not necessary to select the photocell option for the C6000 range of control units.*

Auto Prime

It is possible to set the printer to automatically prime the print head after a set number of prints. The printer will expel a small amount of ink from the nozzle plate after the prints.

See page 52 for further details of the Auto Prime function.

IP Settings

Note: *This menu is password protected.*

The IP Settings menu provides network information for the printer, such as IP Address, Subnet Mask and Gateway.

FORMATTING MESSAGES

CREATING A MESSAGE

A “message” is a line or lines of text, bar codes and graphics (“logos”) that are printed to produce information on the substrate.

Messages can be saved into the memory and will remain even when the power is removed. These messages can be edited and updated at any time or erased if no longer required.

Zero characters can be toggled to print as 0 or ∅ (with a slash). Press **upshift** and 0 to display the following message (depending on which 0 state the printer is currently set):

```
ZERO WITHOUT SLASH
PRESS ANY KEY
TO CONTINUE
```

```
ZERO WITH SLASH
PRESS ANY KEY
TO CONTINUE
```

Press **upshift** and 0 to toggle again.

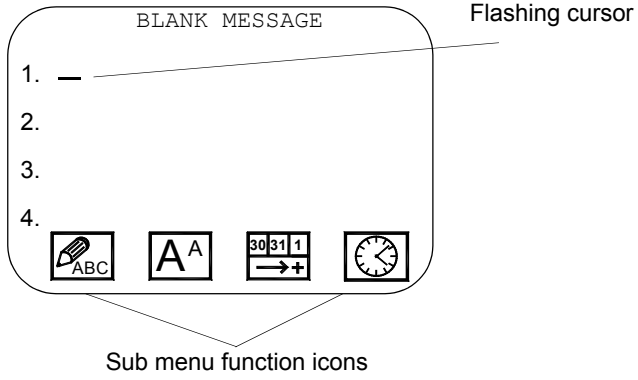
(1) When creating a new message, select the **edit which message?** icon .

(2) The saved messages screen will be displayed. Since there are no messages currently saved, the only option available is the create new message option, press **enter** to select.

```
EDIT WHICH MESSAGE?

>new
```

(3) The screen will prompt as shown below.

Note: *It is always worthwhile creating a back-up reference of all messages on paper. There is space provided at the back of this manual to record message names and contents.*



Edit Which Message? Sub-Menus

The **text** and **attribute** function icons located under the **edit which message?** icon are shown below. The operator should familiarise themselves with these icons to understand the message editing and creation capabilities available.

EDIT WHICH MESSAGE? SUB–MENU ICON	Function & Description
	**Edit an Item**, to edit the parameters of a bar code, the name of a logo or variable information (e.g. sell by dates), select the edit function while the cursor is at the front of the field.
	**Select a font**, the operator must select which font size is required for different parts of the message, if not selected the default is automatically entered. There are four different font sizes, full, half, quarter and the default eighth.
	**Sell by date**, when a sell by date is required it can be entered using the sell by date icon.
	**Real time commands**, if times, dates and shift codes are required in the message, this can be done using real time commands and represented as normal text or coded for confidentiality.
	**Counting**, if a box count is to be entered into the message then this can be done incrementally or decrementally. There is also the option of including a pallet count. Only one incremental, decremental and pallet count per message.
	**Character map**, most alternative characters are available under the character map icon.
	**Bar code**, a list of ten different bar code types are available, directly from the control unit memory. The bar code horizontal scale and raster size can be controlled via the control unit using the parameters function.
	**Logo list**, logos can be stored in the logo store and can be accessed and inserted in any message via this icon. Any logo inserted via the control unit will always use the full print height.

Vv	**Variables,** this allows the insertion of variable information into a message. These can be either prompted or external. Prompted will prompt the user to enter information and external will read information from an external source, i.e bar code scanner.
f	**Alternative Font,** an alternative font can be used in message areas such as sell by dates and shift codes. Refer to the Connect manual for further information on downloading an alternative font.
	**Data matrix Code**, if a data matrix code is required in the message, it can be entered by using this icon. The height and width of the code is also set within this command.
	**QR Code, if** a QR code is required in the message, it can be entered by using this icon. All functions relating to this code are entered using this command.

Select Alternative Font

It is possible to download an alternative font (via external software). This can then be used in messages for the following:

- Sell by Alpha Months, Days and Hours
- Shift Codes

For more information on downloading an alternative font, contact Domino or refer to the Connect User Guide.

To use the alternative font, in the **edit/create new message** screen, scroll to the f icon and select. The icon should now be displayed in the top right hand corner to indicate the alternative font is now enabled. Any text entered in will now use the alternative font.

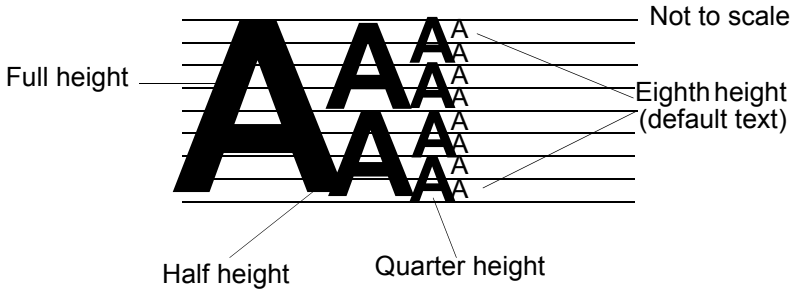
To turn the alternative font off and return to the default font, scroll to the f icon and press. The icon will no longer be displayed. Toggle between default and alternative fonts to design the required message.

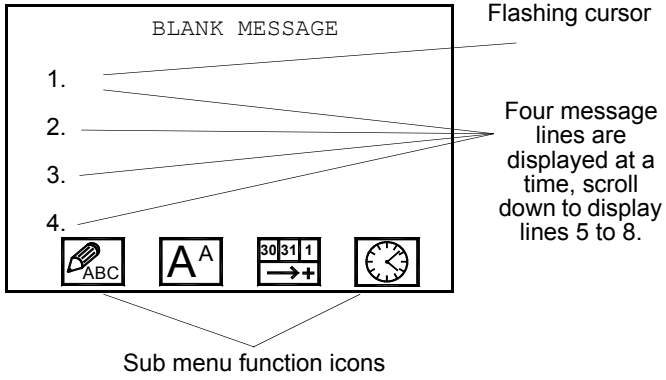
Using the alternative font it is possible to print a message containing two languages e.g. English and Arabic.

ENTERING TEXT

When the **edit which message?** screen is selected, it is possible to start typing text in straight away. The eighth high text is the default size.

The flashing cursor is the point where the text will start to appear. This is the top line of the message. There are eight lines in total but all eight lines can only be used simultaneously if the text height remains at the default size. Each line has a number to the left, four lines are displayed on the screen at a time, use the scroll key to view lines 5 to 8.





If another size text is required, use the select a font icon. The default text cursor is shown as a flashing line.

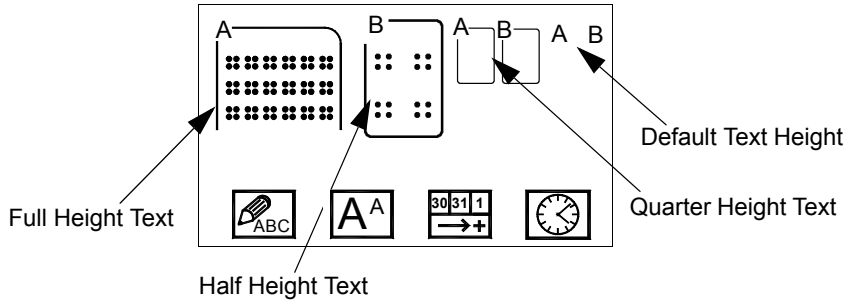
When other font sizes are required, press the font selection icon, and select which size is required, notice that the size of the cursor is dependant on the font size selected.

If full height text is selected, the cursor will change to a large black square, when text is entered all available space on the message screen is occupied by a box with the selected character in the top left corner. Because the bounding box occupies all eighth lines it is not possible to see all of the box.

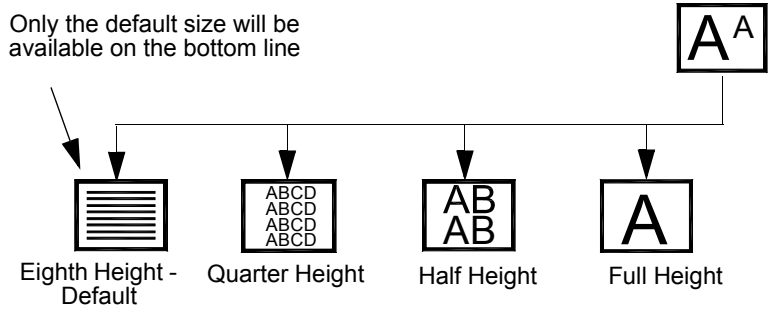
The half height (two line) text cursor is a smaller square. The half height text on the screen is bounded by a box occupying half the available space (four lines).

The quarter height text cursor is smaller than the half height, the quarter height text on the screen is bounded by a box occupying a quarter of the available space (two lines).

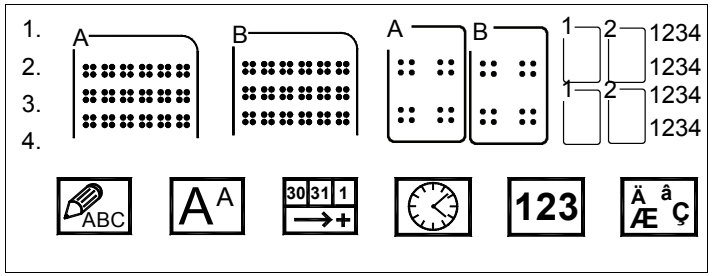
The default text does not have a box boundary as it can be entered on any line.



Full height text can only be entered in the top line, half height text can only be entered on the first five lines and quarter height on the first seven lines, therefore depending on which line the cursor is on dictates which text icon appears in the menu, i.e. on the eighth (bottom) line, only the default eighth height text will be available.



The following example shows what is displayed on the screen and the corresponding print.

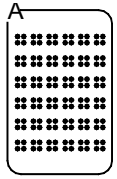


Note: *Not actual screen size, it has been stretched to show all the characters across. Use Scroll bars to view the bottom four lines of the message.*

There are various key presses to enable the user to move around a message, these are detailed in the following table.

Message Edit keys	Function
	Moves the cursor forward or backward through the message line
	Moves the cursor up and down through the eight message lines
	Moves the cursor to the end of the current line
	Moves the cursor to the beginning of the current line
	Enters a space immediately to the left of the cursor
	Erases the character immediately to the left of the cursor
	Erases entire line that the cursor block is on, all other lines will remain intact
	Use the up shift and the required character key to access the green characters in the top corner of the alphanumeric keys
	Use the down shift and the required character key to access the lower-case characters
	Enters the command and saves the message that has been created or edited
	Escapes from the create/edit message function back to the main menu bar

The following table shows the symbols that appear on-screen within a message.

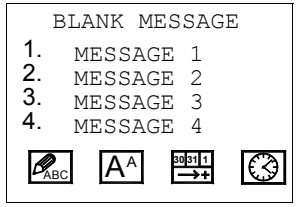
Sub-menu icon	Format boundary symbols	Symbol explanation
		Full (eight line) height text
		Half (four line) height text
		Quarter (two line) height text
		Graphic (“logo“)
		Bar code attribute
		Data matrix attribute
		QR code attribute

MESSAGE LAYOUT

If eight text lines are overlaid on top of a message, a clearer understanding of the minimum, maximum height and layout parameters can be seen.

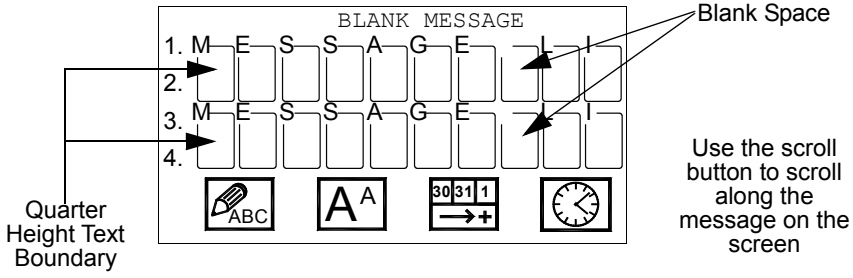
The Message editor parameters are constrained by the eight line heights.

In this example, four lines of default (eighth height) text have been typed into the top four lines. Because no font format has been selected, the size of the text is set to the default eighth height text. Notice that there are no box boundaries. To move from one line to the next, the up down cursors ▲ ▼ are used. A sample of the print out is shown.



MESSAGE 1
MESSAGE 2
MESSAGE 3
MESSAGE 4

In the next example, two lines of quarter height text are entered.



Selecting quarter height text from the **Select a font** menu icon changes the cursor to the small (quarter height) square.

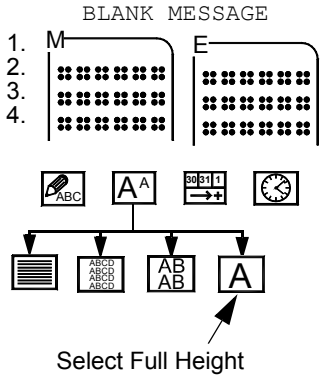
After typing the first line (“MESSAGE LINE 1”), press the down ⓥ cursor to get to the third line.

Type the next line of text (“MESSAGE LINE 3”).

The sample shows the information printed.

MESSAGE LINE 1
MESSAGE LINE 3

The next example shows the sequence needed in the message editor to achieve the sample shown. Again the **select a font** [AA] menu must be opened and **full height text** [A] chosen. The operator will notice the text boundary cursor change to the large (full height) square. Unless a new text format is selected or a new line is chosen, the full height text will remain open.



MESSAGE

Full height text can only be entered onto the top line.

Notice that all the text does not fit onto the message edit screen, the screen will scroll along as the message increases beyond the LCD parameters.

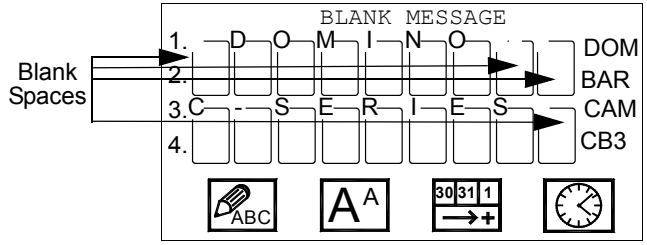
It is recommended to always do a test print prior to production.

ADDING SPACES

In the figure opposite, no spaces have been entered, resulting in the default text on the first two lines not aligning with the rest of the address. In order to make the message clearer to read, it is necessary to enter spaces where required. The example below shows the message with spaces added and the screen shows the spaces entered.

DOMINO DOMINO UK Ltd
BAR HILL
C-SERIES CAMBRIDGE
CB3 8TU

Note: *This example uses quarter and default text heights for clarity, and only the first four lines are shown below.*



If uniform spacing is required, here are some useful tips:

- Calculate where the spaces need to go.
- Calculate whether the spaces need to be large or small.

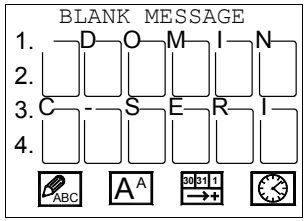
The example shows, that by adding quarter height spaces, the quarter height text can be centred and separated from the default text.

DOMINO DOMINO UK Ltd
BAR HILL
C-SERIES CAMBRIDGE
CB3 8TU

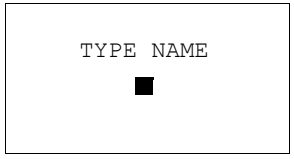
SAVING A MESSAGE

When a message has been completed, it must be saved and given a name, as follows:

(1) When the message is complete, press the **enter** key ↵ .

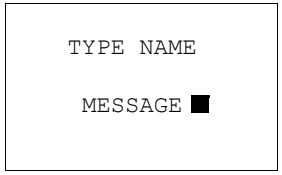


(2) A screen similar to this will be displayed. Enter the required message name, up to eight characters.

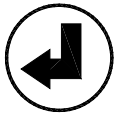


Note: As the default test message is named "Test", it is not possible to use this name.

(3) If an existing message is being edited the option of renaming the message will be given.



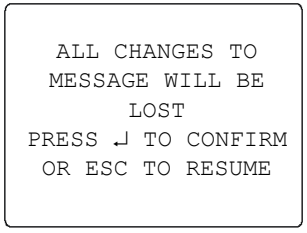
(4) Once the message name has been entered, press **enter** to confirm.



At any point during message creation, or editing, the operator may escape back to the main menu bar by pressing the **escape** Esc key.

*Note: If the **enter** ↵ key is used, the new or changed message will not be saved.*

The adjacent confirmation screen will be shown to prevent accidental loss of information.



MESSAGE ATTRIBUTES

The next stage of message construction is inserting attributes. The attribute functions are located in the sub menu in the **edit which message?** menu.

Edit

If the information in sell by date, real time command, count, bar code, logo or variables is incorrect, use the Edit function to alter.

The cursor needs to be positioned at the beginning of the field.

If, for example, the sell by date requires editing, go to the first character and press the edit button. The screen will then change to the first of the sell by date screens, allowing the user to change any incorrect information.

With bar codes and logos, the edit button can also be used to check the name of the bar code or logo.

Entering a Sell By Date

One of the most commonly used attributes is the **sell by date** function. To enter a sell by date enter the **edit which message?** menu.

(1) Using the **select a font** menu, select which font height the sell by date is to be printed, the cursor will change at the beginning of the message, or select the alternative font to use a downloaded font (see *page 91*). After the height format is chosen, select the **sell by date** icon.

(2) The option of entering the sell by date in days, weeks or months is available, in this example the sell by days option is chosen.

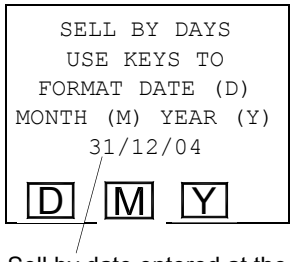
If sell by weeks is selected then rollover day needs to be selected 1 = Monday etc.

```
CHOOSE SELL BY OPTION
>SELL BY DAYS
 SELL BY MONTHS
 SELL BY WEEKS
 SELL BY END OF MONTH
```

(3) Type in the number of days (or months) ahead that the product sell by date will expire (in this case 10 days). Press **enter** to confirm.

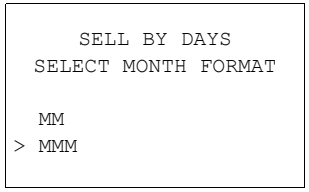
```
SELL BY DAYS
ENTER DAYS AHEAD
RANGE FROM 1-999
10
```

(4) After the days (or months) entry has been confirmed, the sell by date is calculated and is confirmed with the **enter** key. The format can be altered - 31/12/04 or 31 DEC 2004 - as follows:



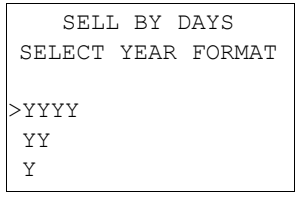
(5) Select Format **day** icon [D], the relevant day will appear (in this case 31), then press space to add a space or any punctuation can be added for example, **:** or **/**. To add punctuation press up shift and the relevant punctuation.

(6) Select the **month** [M] icon, the option will be either a written abbreviation or number format. In this example the written abbreviation has been chosen, again add a space or punctuation. Press **enter** to confirm.



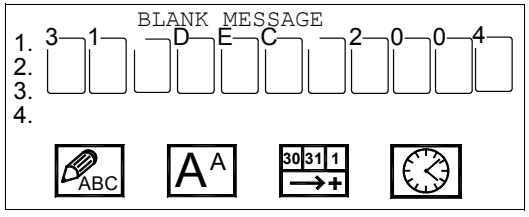
Note: *Sell by end of month always prints the day of the end of month*

(7) Select the **year** [Y] icon, there are three options for the year format. These are the full year and then two abbreviations. In this example the full year format was chosen. Press **enter** to confirm.



(8) When the sell by date has been confirmed, it will be entered in the message editor as shown.

Note: *This example shows quarter height.*



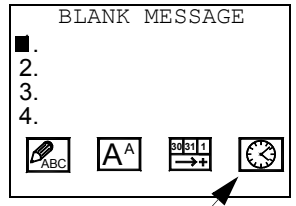
Real Time Commands

This attribute allows the operator to enter information such as:

- Time and shift code that a box was printed
- The date/month/year that a box was printed
- It can also print the day of week, day of year and week of year.

The following steps show how each of these functions can be entered. All this information can be printed in the same message, but for the purposes of these examples they will be printed separately.

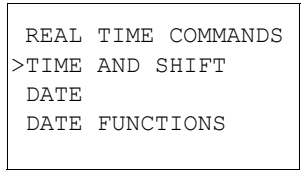
(1) Before starting, the size of the message has to be decided. After entering the **edit which message?** menu, the quarter height text should be selected through the select a font menu. Or select alternative font to use a downloaded font (see page 91). Select the **real time commands** icon.



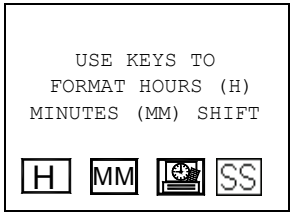
When the required text height is selected, select the real time icon.

(2) In the real time commands screen there are three options:
•TIME AND SHIFT
•DATE
•DATE FUNCTIONS

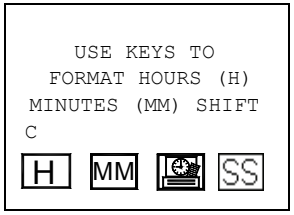
Use the up and down keys to move the > cursor to the required selection. In this example **time and shift** is selected, press **enter** to confirm.



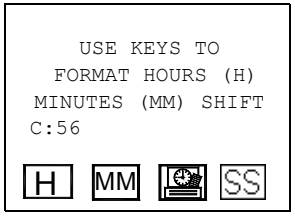
(3) In the time and shift screen, the option to print the time can be selected by pressing **enter**. If a shift code is required, or the format needs to be changed, the following steps must be performed:

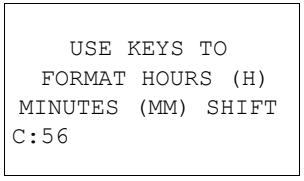


(4) To adjust the **hours** format, select the H icon. There are two options for showing the hours in the message, the first is the 24 clock number, the second is represented as an alphabetical letter, taking **A** as 00.00hrs and **X** as 23.00hrs. In this example, the letter format will be used. Press **enter** to confirm the choice.

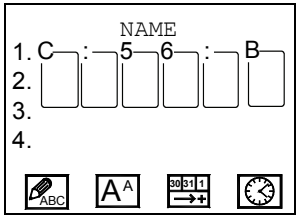


(5) After the hours have been entered, a space can be left or a punctuation can be inserted, (in this case a colon**).** When the colon has been entered, the minutes are entered by selecting the **minutes** MM icon.



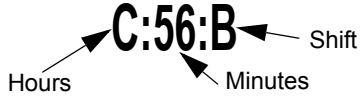


(6) The final input is the **shift code**. If required, select the icon and press **enter** to confirm the information, it will be entered onto the message, in this example the shift is "B".



Note: In this example quarter height is used.

(7) Save the message. The sample shows the messages printed using the information in this example.



When using the **date option** of the real time commands, the default date is set automatically and the format can be transformed in the same way as the sell by date. It is important to remember that the size format must always be entered before the function is selected. There is no need to do this if default text is required.

10 DEC 2004

Format the **date function,** as follows:

(1) After entering the **edit which message?** menu, select the required text height, then select the **real time commands** icon.

(2) Select the **date functions** option.

```
USE KEYS TO
FORMAT DOW DOY
WEEK NUMBER (W)

DOW  DOY  W
```

(3) If the **day of week** DOW icon is selected there are two options, letters or numbers, which correspond to the days of the week. The numbers run from **1-7** and letters from **A-G**. In this example the number format was used.

```
REAL TIME COMMANDS
SELECT DAY OF WEEK
      FORMAT
> 2
  B
```

1 or A = Monday
2 or B = Tuesday,
3 or C = Wednesday
4 or D = Thursday
5 or E = Friday
6 or F = Saturday
7 or G = Sunday

Note: *This is dependant on the first day of week setting in the clock. For the example above Monday was day 1.*

(4) The **day of year** DOY icon gives three choices for day of year counting, the top choice is the European standard and the other is the **Julian day of year***.

```
SELECT DAY OF YEAR

>  FEB 29 = 60
   FEB 29 = 366
   MAR 01 = 61
```

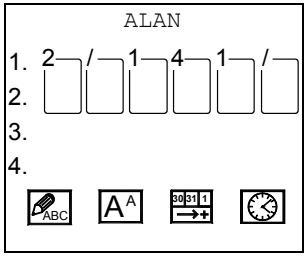
***Julian day of year** – on a leap year this American standard will count the 29th of Feb as day 366 rather than day 60. Therefore from the 29th Feb it will count one day behind the European system, until the end of the leap year. The European standard continues the year count with 31st of December being day 366 (29th Feb being day 60). Other than a leap year both systems will count the same.

Also an option added that March 1st is always day 61, which means there is always 366 days in a year.

In this example the European standard is used, which is the default setting.

(5) The **week of the year** W icon will insert the week of the year into the message format. Again if any extra punctuation is needed this can entered between each function.

Note: The week of year calculation is configurable from the clock icon on the main screen. The options are 1st JAN ALWAYS WEEK 1, first four days and first full week. The week rollover day is also configurable.



Note: In this example quarter height is used.

(6) When everything has been entered, save the message. A sample **date function** is shown.

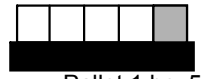
Counting

Counting is a message attribute that allows the operator to include box counts and pallet counts on the message line print out. Counts can be set up incrementally or decrementally depending on the requirement.

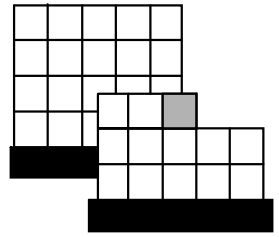
A pallet and box count can be included on the same message line. If the total number of boxes on a single pallet is 20 for example, the first box would read **box** 1 **pallet** 1, the second **box** 2 **pallet** 1, etc. The 21st box is therefore the first box of the new pallet.

Assuming that the pallet is only one box deep

Pallet 1 box 1



Pallet 1 box5



Pallet 2 box 13

To set up a straight forward incremental box count follow these steps:

(1) Select the **counting** icon from the the **edit which message?** menu. The option of incremental, decremental or pallet counting are given. In this example the incremental option is chosen. Press **enter** to confirm.

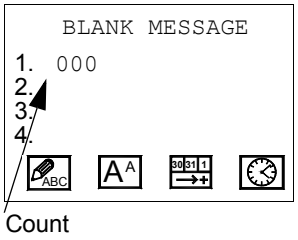
```
COUNTING

>  INCREMENTAL NUMBERS
   DECREMENTAL NUMBERS
   PALLET COUNT
```

(2) The counting parameters are shown, these can be adjusted by over typing the set values. The **start** value is where the count will start (in this case one). The **maximum** can be set to any value. When this value is reached the counting will reset back to the start value. Finally, the **boxes per inc.** value is how many boxes are in each increment, in this case one. Press **enter** to confirm and enter the information into the message editor.

```
INCREMENTAL COUNT
START          001
MAXIMUM        9999
BOXES PER INC.  01
```

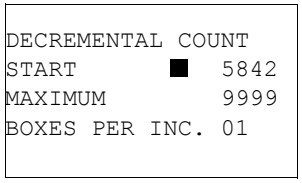
Note: *Only one incremental count, one decremental count and one pallet count can be used per message.*

(3) When the information is entered into the message it can be set to any text height or select alternative font [f] to use a downloaded font (see page 91). The count will increment every time the sensor is triggered.

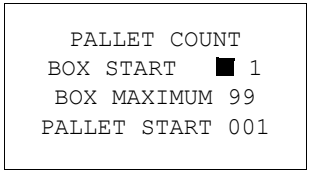


To set decremental box counting, follow the same steps ensuring decremental counting is selected from the options menu.

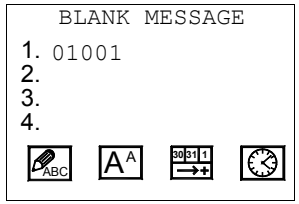
When this is done, a similar values screen is displayed showing the **start** value at 5842, this is the default count down value and may be altered with a new figure. The **maximum** in the case of decremental counting is set to the figure the decremental counting is to start from again. When the count reaches zero, it will reset to its maximum value. Finally, the **boxes per inc.** value is the amount of boxes included in one decrement. To confirm any changes press **enter**.



When the pallet counting option is chosen, the **box start** value is set at its default value 1. In the pallet count, the **box maximum** value is the amount of boxes per pallet, the default is 99. The final value is the **pallet start** the default is 1 and can be altered by over typing the value with the cursor block.



The message editor example shows the information displayed when the default pallet count information is entered into the message editor. Again, the size can be adjusted and further information can be added to the message line, but this is essentially all that is required to create a box or pallet count inside a message.



Note: *When completing jobs, that have counting attributes in them, it is worth knowing that the counting values will continue to increment from where they finished the last time that the particular message was used. To reset the count value on a message, delete the attribute and re-enter the correct value.*

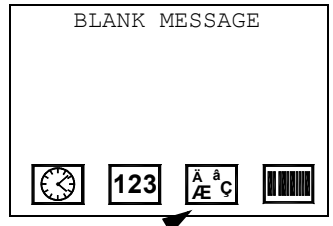
Character Map

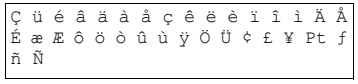
The Character Map is mainly used to enter characters not commonly used in the English language.

To access the **character map** menu, select the character map icon from the **edit which message?** menu .

A list of the most commonly used characters is displayed. At the start of the top line a flashing cursor block can be moved over any of the individual characters. When the required character is beneath the cursor block, press the **enter** key to insert the character into the message editor.

In the message editor, the character can be combined with normal text to produce messages as shown.





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QUALITÄt KÄSE

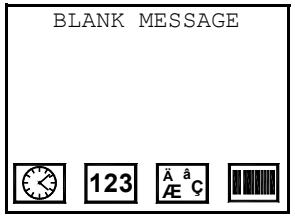
Bar Codes

Bar codes are generated under the **edit which message?** menu and are considered as message attributes. The printer has ten different bar codes programmed into the control unit:

- EAN 128
- CODE 128
- ITF 14
- EAN 13
- UPC A
- UPC E
- CODE 39
- EAN 8
- CODE 93
- INTERLEAVED 2 of 5

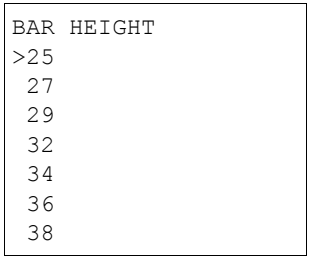
To enter a bar code into a message proceed as follows:

(1) Enter the **edit which message?** menu, choosing to create a new message or edit an existing message. In the message editor select the **bar code** icon.

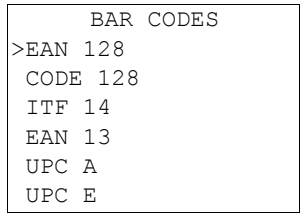


Note: Bar code height available on C6000, C3000.

(2) If the cursor is positioned on lines 1,2,3 or 4, a screen is displayed giving the option to change the height of the bar code. Use the up and down cursor keys to select the required height. On C3000 height is only selectable between half head and full head and is only available on lines 1 & 5.



(3) If the EAN 128 option has been selected, there are six icons that can be used in this bar code:



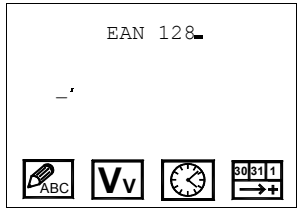
- Real time commands
- Sell by date
- Counting
- Variable
- Edit
- Function 1

These icons work in exactly the same way as the attribute icons on the message editor.

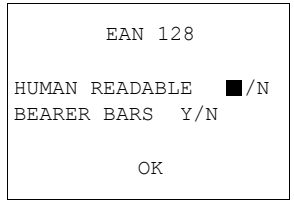
For Variable information, see page 82.

If the bar code does not allow variable information, simply enter the required bar code number.

Note: *Only one incremental, decremental and pallet count are allowed per message.*



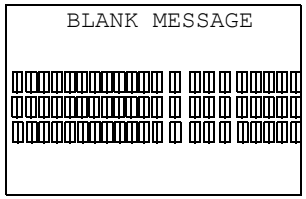
(4) When the bar code information has been entered, press the **enter** key to confirm. Before the information is entered into the message editor, the control unit will prompt if the message should be **human readable** and whether **bearer bars** are required. To select these options, use the cursor keys to toggle between **Y/N** and to move from one line to another. When finished press the **enter** key to confirm. The differences between both these options are shown in the two different samples on the following page.

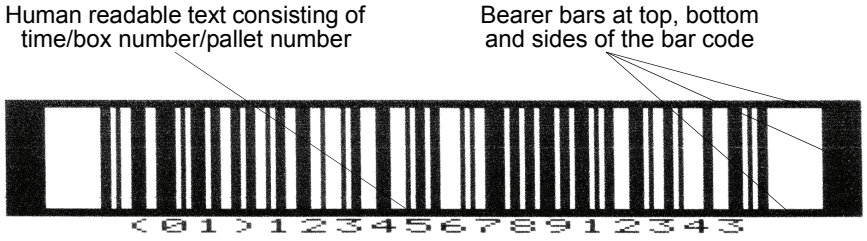


Note: *Bearer bars are only available for EAN128, Code128, Interleaved 2 of 5 and ITF14 type bar codes.*

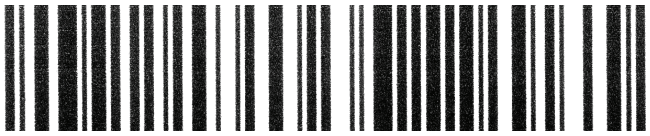
Note: *For ITF14 bar codes an additional option is available to allow SSCC space for the human readable bar code.*

(5) The bar code information is inserted into the message editor.





Both these sample bar codes are EAN 128's. The top one has bearer bars and is human readable



Bar code Samples	Bar code Parameters
	**EAN 128** Maximum length: 155 mm Minimum length: Variable Bearer bars: Optional Human readable: Optional **CODE 128** Maximum length: 155 mm Minimum length: Variable Bearer bars: Optional Human readable: Optional **ITF 14** Maximum length: 147 mm Minimum length: 76 mm Bearer bars: Optional Human readable: Optional **EAN 13** Maximum length: 63 mm Minimum length: 25 mm Bearer bars: N/A Human readable: Optional **UPC A** Maximum length: 63 mm Minimum length: 25 mm Bearer bars: N/A Human readable: Optional **UPC E** Maximum length: 37 mm Minimum length: 15 mm Bearer bars: N/A Human readable: Optional **CODE 39** Maximum length: Variable Minimum length: Variable Bearer bars: N/A Human readable: Optional **CODE 93** Maximum length: Variable Minimum length: Variable Bearer bars: N/A Human readable: Optional **EAN 8** Maximum length: 45 mm Minimum length: 18 mm Bearer bars: N/A Human readable: Optional

Note: All measurements of the above bar codes apply to the total length of the bar code excluding the light bars, which are set automatically.

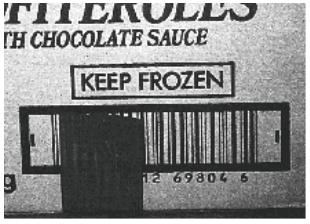
Creating a Bar Code

There are certain recommendations and guides that should be followed when creating bar codes. The previous table shows samples of all ten bar codes available, and the guide lines stipulated by the EAN.UCC. These guide lines recommend the minimum and maximum parameters for the horizontal scale of the various bar codes.

Notes: (1) EAN 128, CODE 128, CODE 39, CODE 93 and Interleaved 2 of 5 bar codes all contain variable length information. This means the recommended dimensions are variable. The only way to test these bar code types is to use a verifier or a scanner.

(2) A shaft encoder must be used when printing bar codes.

It is advised, when creating messages that include bar code information, that some test samples are printed to check that the bar code will function properly. The bullet points below outline the common problems that should be considered:



Ensure that the bar code will not be obscured by sealing tape, straps, labels, etc.

- Decide where the bar code is to be positioned on the print surface, ensure that it will not be obscured by sealing tape, straps, labels etc.
- Avoid creating bar codes outside the ANA (e.centre in the UK) size guides
- Ensure that the DPI is set to 200 or above
- Check that the speed setting on the control unit is set correctly. A shaft encoder will be needed when printing bar codes.
- On some porous surfaces, the ink may bleed very slightly making bar codes difficult to read. If this occurs, use the raster remove parameter (see page 127) to space the individual bars further apart.
- Use a bar code verifier to analyse the bar code, ensuring that it meets the given specifications and has not deviated from the ideal dimensions.

Note: For further information and sales enquiries about bar code verifiers contact Domino.

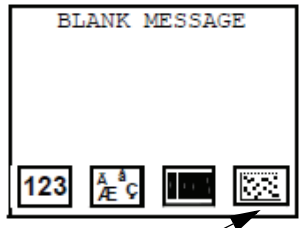
Bar code verifier

Data Matrix Codes

Data matrix codes are generated under the **edit which message?** Menu and are considered as message attributes.

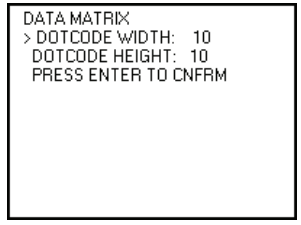
Enter a data matrix code into a message as follows:

(1) Enter the **edit which message?** Menu and choose to create a new message or edit an existing message. In the message editor, select the data matrix code icon.



data matrix code icon

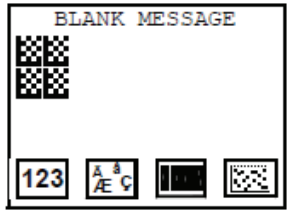
(2) Enter the width and height required of the data matrix code, making it large enough to encode all the data that is required.



Select width and height from list.

(3) Five icons can be used in this data matrix code:
- Real time commands
- Sell by date
- Counting
- Variable
- Edit

When the data matrix code information has been entered, press the **enter** key to confirm. The information is then entered into the message editor.

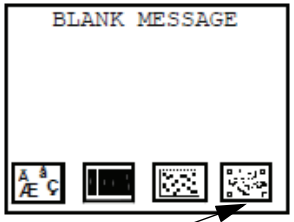


QR Codes

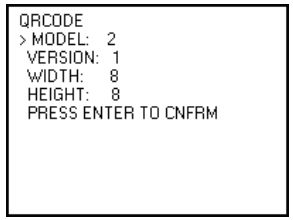
QR codes are generated under the **edit which message?** Menu and are considered as message attributes.

Enter a QR code into a message as follows:

(1) Enter the **edit which message?** Menu, and choose to create a new message or edit an existing message. In the message editor, select the QR code icon.



(2) Enter the model that is required of the QR code, making sure that it is large enough to encode all the data that is required. The version can remain as 1, unless model 15 is selected. The height and width dictate the size of the QR code.

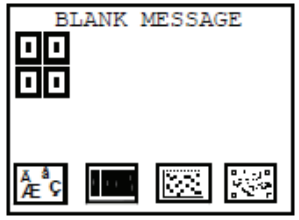


Select the model required of the QR code.

(3) Five icons can be used in this QR code:

- •Real time commands
- •Sell by date
- •Counting
- •Variable
- •Edit

When the barcode information has been entered, press the enter key to confirm. The information is then entered into the message editor.



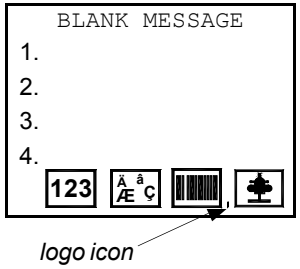
Logos (Graphics)

It is possible to store logos in the control unit memory.

The logos can be inserted into any message and take up the full eight line height of the message editor. There is no need to insert any height format boundaries.

Enter a logo from the default logo list as follows:

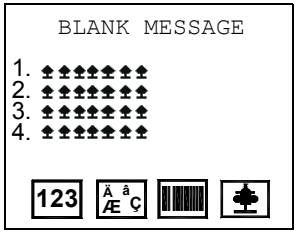
(1) Select the logo list icon from the **edit which message?** Menu.



(2) Choose a logo, in this example the keep dry logo is chosen, press **enter** to place the logo into the message editor.

Select logo from list.

(3) The logo name is automatically entered into the message editor. When the logo has been entered, other message attributes and text can be entered into the message editor. Press **enter** to name and save the message. The following sample shows a simple message format with a logo inserted.



The logo will be represented on screen by the icon.

To delete a logo from the logo list, use the up and down arrow keys to select the unwanted logo and press the delete key . A confirmation prompt will appear asking whether or not the logo is to be deleted.

Example of logo print out

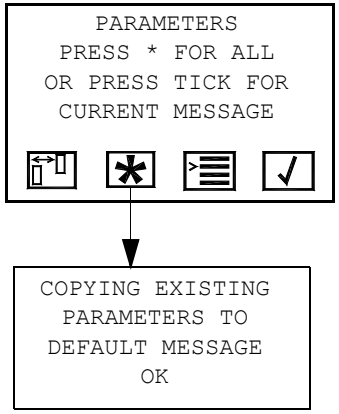
ADJUSTING PARAMETERS

MESSAGE PARAMETERS

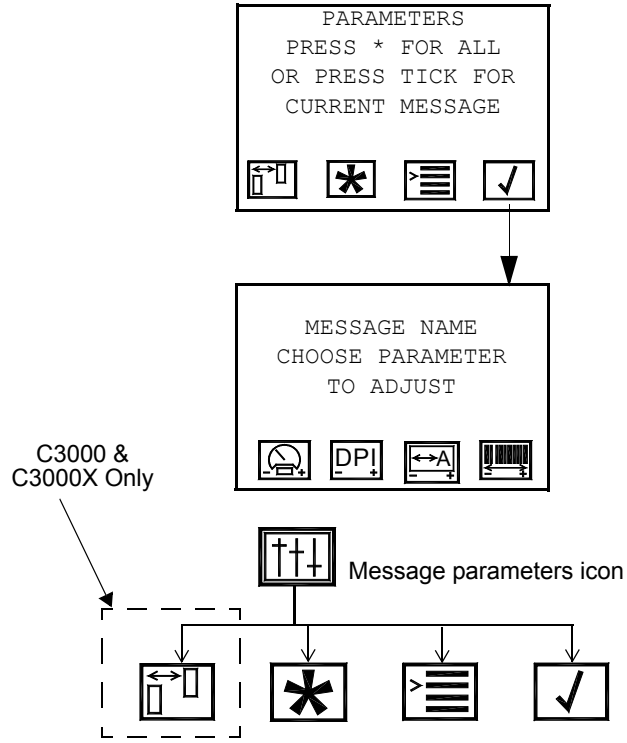
When a message has been saved, the message parameters can be adjusted to suit the required quality and needs of a particular task. The parameters that may require adjustment are:

- Speed
- Resolution
- Delay
- Bar code magnification
- Bar width
- Character Width
- Phase Adjust (C3000 & C3000X only)

These parameters can be adjusted at any time. There is also an option to use the current message parameters as the default so any future messages created will use the same settings as those chosen for the current message.



*When the parameters menu is entered, there are three options, two for editing a specific message and the * icon for copying the existing settings to be the control unit default*



The diagram above shows the three main parameter functions. These functions are:

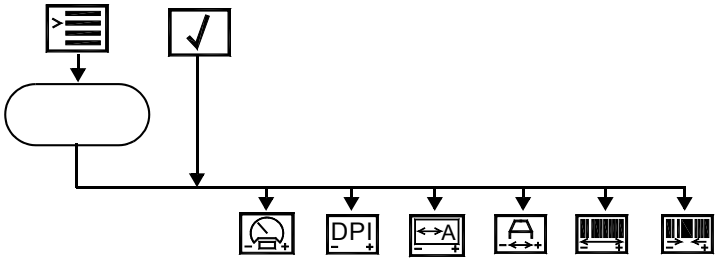
Copy current message parameters as default, this icon selects and copies the current message parameters and sets them as the default setting. If standard print delay, speed and resolution are required for all future messages, this function should be selected, this saves time setting the parameters for every message.

Pick which message to adjust, allows the operator to select a message from the saved messages list in the control unit memory and select it as the current message to be adjusted.

Select the current message, this selects the message that is currently printing and goes directly to the parameters sub menu.

Phase Adjust, this is only applicable to the C3000(X). As these printers have two nozzle plates, the phase adjust allows the numerical adjustment of the print engines to align the print correctly. Select between -10 and 10.

There are six parameters which can be altered.



The following examples show how to adjust these six parameters. The first is the speed parameter. When the printer is located on a conveyor the running speed of the conveyor should be known, this information is usually supplied with the conveyor. To run at the optimum print quality, the print speed should be set to the speed of the conveyor.

(1) If the **speed parameter** icon is entered, the adjacent screen will be displayed. The maximum speed of the conveyor is shown on the top line, relative to the output resolution. The current running speed is shown on the third line and the option to enter a new value is given on the last line. Depending on whether a faster production line is needed or higher quality print is required determines whether the speed should be altered. To enter a new value the **enter** key must be pressed.

```
MAXIMUM SPEED IS 30
  FOR ACTIVE DPI
    SPEED = 15

  ENTER NEW VALUE ■
```

In the above example, the printer is set for a conveyor travelling at 15 meters per minute. The resolution is set to the default 200 DPI. The sample below shows the print out at these settings.

SPEED

In the sample below the speed parameter is set too fast, causing the message to become squashed and unreadable.

Note: It is important to keep the speed setting on the control unit relative to the conveyor speed. If not, this can lead to distortion of the messages and inaccuracies with other parameters like dpi and delay. The maximum line speed is 144 metres per minute (depending on dpi), conveyors of higher speeds are not recommended.

DPI **Dots per inch** (dpi) is the resolution that the message is printed, the higher the resolution the more dots are packed into an area creating a tighter, sharper and higher quality print out. The printer controls the output resolution by adjusting the horizontal scale of the print out - a message printed at 300dpi will be smaller than the same message printed at 75dpi.

The default output resolution is 200dpi. The resolution ranges from 75 to 300dpi. The higher end of the scale is generally intended for graphics ("logos") and high quality text. The lower resolutions are intended for less quality dependant and faster jobs. When the speed parameter is set correctly, the DPI value will print out correctly. As the dpi increases, the maximum print speed will go down.

Note: If the DPI is set above the recommended value for the current speed, the printer will change the speed value accordingly.

(1) The screen sample shows which screen prompt appears when the **DPI** DPI icon is pressed. If the dpi has not been changed, the current dpi setting should read 200. Beneath the current settings is a list of available dpi settings. On the last line there is a flashing cursor block, where the new value should be entered. Press **enter** to confirm the new resolution.

```
CURRENT DPI = 200
ACCEPTABLE VALUES
ARE 300 240 200 170
  150 120 100 75

ENTER NEW VALUE ■
```

In this screen sample the resolution is set at default 200dpi and shows the range of alternative resolutions available.

These samples show a test print at the various print resolutions available.

300dpi

Maximum print speed: 36m/min

200dpi

Maximum print speed: 54m/min

150dpi

Maximum print speed: 72m/min

120dpi

Maximum print speed: 90m/min

100dpi

Maximum print speed: 108m/min

75dpi

Maximum print speed: 144m/min

The delay icon is used to position the message in relation to the leading edge of the printing surface. If the delay is insufficient, the message will print too close to the leading edge.

If this occurs, enter the delay parameter menu and add a sufficient delay. The default value is set at 15 and can go up to a maximum of 9999.

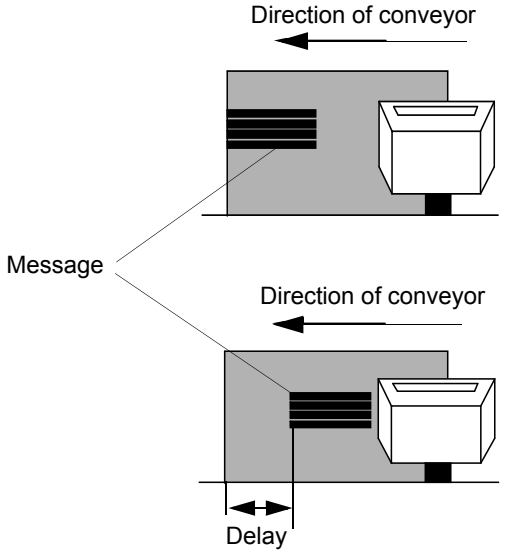
```
CURRENT DELAY = 15
MAX. VALUE = 9999

ENTER NEW VALUE
```

These values relate to the rasters which make up the vertical component of the text or graphics. To create a delay, the value must be entered at the flashing cursor block, this amount can be guessed but to work out an accurate delay the following equation should be used:

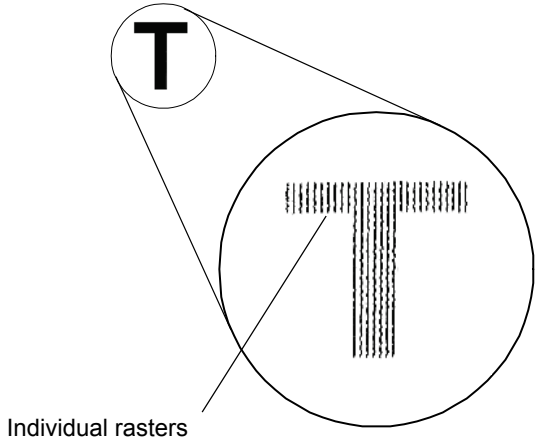
$$\frac{\text{DPI}}{25.4} \text{ X } \text{Distance from the leading edge in millimetres} = \text{Value in rasters that must be entered as the delay}$$

For example if a 100 mm delay is required at 200dpi then the delay value is 787 (assuming the conveyor and speed settings are set correctly):

$$\frac{200}{25.4} \text{ X } 100 = 787$$



The 1st example above shows where a message appears when a very small delay is added in the parameters function, in the 2nd example the delay has been increased.



Each character or graphic on a messages is made up of rasters, these are the tiny vertical lines that make up a particular character or graphic.

The Print Width parameter allows the width of the text characters to be adjusted, selecting 1 will reduce the width to half the width of the 2 setting. This will adjust per message.

The final two parameter functions are specifically for bar codes and control their parameters within a message.

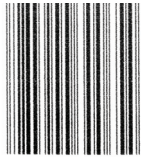
Bar code magnification allows the width of a bar code to be changed.

(1) When this function is entered it will be set to the default bar code magnification. There are 12 magnification settings. Press the up/ down cursor key to set the required magnification value (shown next to the code type), press **enter** to confirm the value.

```
  BAR CODE MAGNIFICATION
EAN/CODE 128  : 59%
ITF 14/I 2of5 : 117%
EAN 13/8      : 180%
CODE 39(CPI)  : 3.6
CODE 93(CPI)  :  4.8

    USE CURSOR KEYS
  TO CHANGE MAG FACTOR
```

Below are two samples of the same bar code.

EAN 13 bar code printed at the default value



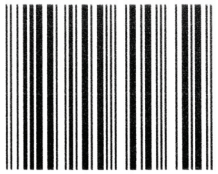
The same bar code printed at a lower magnification value

The raster remove icon controls the thickness of the individual bars on a bar code. This can be important when trying to improve the quality of the bar code. If the bars are too closely spaced or the ink bleeds, causing the bars to merge, the scanner can misread the code. If the raster size needs to be decreased then enter the **raster remove** icon.

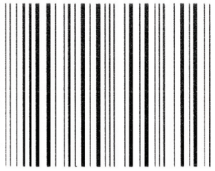
(2) The sample screen adjacent contains a default bar width value of zero, this means that no rasters have currently been removed. The value can be set from 0 to 8 and is entered at the flashing cursor, the **enter** key must be pressed to confirm.

```
CURRENT REDUCE
  WIDTH = 0
ACCEPTABLE VALUES
  ARE 0 TO 8
ENTER NEW VALUE ■
```

The two bar code samples show differences between a raster removed bar code and an unchanged bar code.



Printed at the default setting, notice the rasters are thicker and closer together.



The same bar code printed with less rasters, causing the spaces between the bars to increase.

MAINTENANCE

ROUTINE MAINTENANCE

Under normal operating conditions the unit should require very little maintenance. However, there are periodic checks to ensure the unit remains in good working order.

Note: *The ship cap is used as a protective cover for the nozzle plate and should be used if the unit is left idle for more than 24 hours. This will prevent dust from interfering with the ink delivery.*

These checks are basic maintenance that can be carried out by the operator at daily and 6 monthly periods

The life of the unit relies on the placement of the unit in its environment. The unit should be located where it will not get knocked or connections constantly snagged. The unit should be protected as much as possible from dust, moisture, excessive heat, electromagnetic radiation and intense vibration. Where problems do occur, refer to the Troubleshooting section of this manual.

If air is suspected in the ink system, carry out the priming the print head procedure on page 49.

CAUTIONS:

(1) C6000 - only wipe across the nozzle plate with approved cleaning materials supplied by Domino UK Ltd.

(2) C3000 & C1000 - Avoid contact with the face plate and non-wetting coating, only use wetting agent provided with approved cleaning materials.

(3) Never wipe the nozzle plate when it is dry. Normally a prime is performed prior to wiping.

(4) Wiping should be carried out in one direction only as debris tends to collect on one side of the plate.

(5) The wiper itself should be cleaned after each wiping operation by passing it over absorbent material. Ensure that this material does not shed.

DAILY MAINTENANCE

WARNING: **Eye protection and gloves should be worn.**

CAUTION: *Use only Domino UK Ltd. cleaning products and solutions, using any other products may result in damage to the unit. These cleaning products can be purchased through your local Domino office.*

The daily maintenance of the unit involves a quick clean down of the whole unit. Using a lint free wipe and the cleaning agent provided, clean any ink marks or smears located on the LCD and keypad. Pay extra attention to areas around the nozzle plate and the quick release connection port because these are areas that ink is likely to build-up. Only use the supplied cleaning materials to clean the print head. Using any other material will almost certainly result in damage. For C3000 and C1000 use the cleaning fluid in conjunction with the cleaning materials to avoid damage to the non-wetting coating on the nozzle plate.

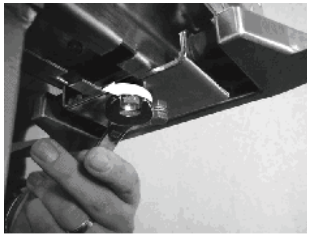
Note: *To maintain the print quality the nozzle plate will need to be cleaned using the prime function (see page 49).*

Changing the Ink Collection Sponge

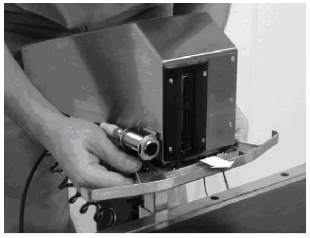
WARNING: Eye protection and gloves should be worn.

If the box guidance option is being used with the unit, the only maintenance required for this component is to keep it clean and change the sponge. Change the sponge when it is starting to look saturated with ink, as follows:

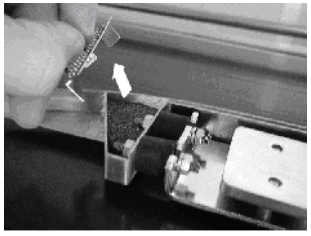
(1) Remove the box guide by removing the securing bolts.



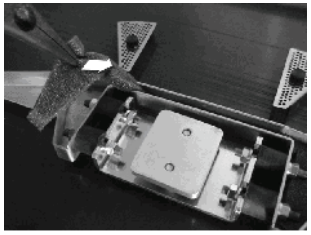
(2) Dismount the box guide by pulling it forward.



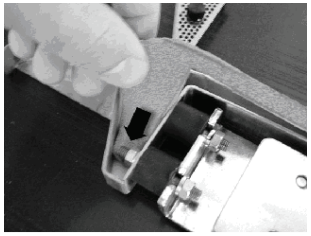
(3) Remove the perforated covers on either side of the rail as shown.



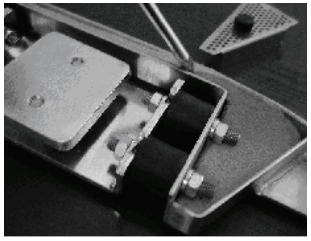
(4) Using a pair of pliers, pull the sponge slowly from the trough to minimise mess and ink splash. The saturated sponge should be discarded in accordance with local authority regulations.



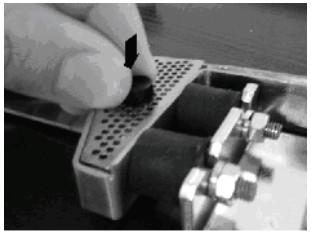
(5) Clean the box guide using the Domino cleaning agent. Insert a new sponge ensuring the sponge fits under the securing nuts.



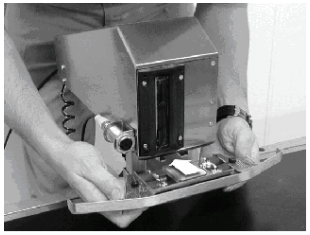
(6) Using the end of a screw driver ensure the sponge fits snugly in its container.



(7) When the new sponge is set in place, refit the perforated covers on the box guide.



(8) Insert the head mounted box guide onto the slide bar and tighten the securing bolts.



EVERY 6 MONTHS

WARNING: Eye protection and gloves should be worn.

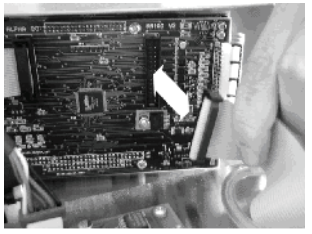
Every 6 months the entire unit requires a complete examination. Check the external and internal tubing and connections for signs of ageing, kinking or leakage. Any worn parts should be replaced.

The ink filter inside the control unit head (C3000(X) and C1000(X) only) and the ink filters inside the base will also need to be replaced every 6 months as follows:

CAUTION: Remove power to the printer.

(1) Remove the control unit head from the mounting post and place on a flat surface. Remove the four screws around the bottom of the control unit head and carefully remove the control unit cover by lifting it straight up.

(2) Disconnect the cover from the power loom. The cover can sit on its side, **do not leave the cover to hang**.



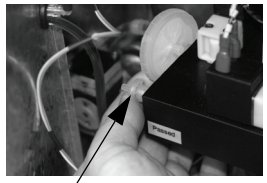
(3) Detach the tubing from both ends of the filter and remove the filter. Dispose of the old filter in accordance with local regulations.

(4) Connect the tubing to the new filter and ensure the power loom is reconnected. Replace the control unit.

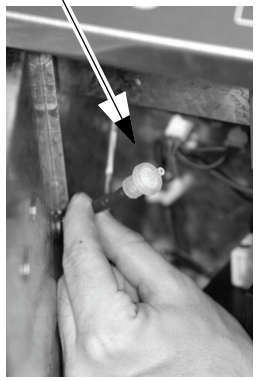
Now replace filters in the base unit as follows:

(5) Open the base door (it may be easier to remove both the outer and inner door for access).

(6) Replace the larger 6µ filter and the two smaller 5µ air filters. These filters have twist fittings



5µ Air Filters



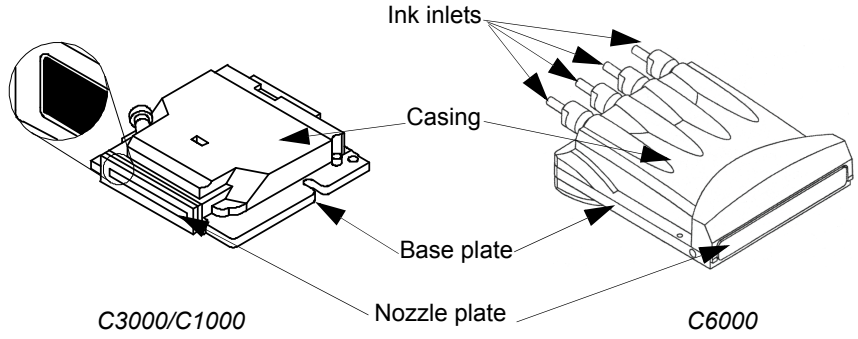
(7) Refit the inner door, if removed in step (5), including the ink pipe and ink bottle connector. Check for any ink leaks before the inner door is secured fully shut.

2L Base Unit:

(1) Replace the 50mm diameter filter between the chamber and the outer pump, in the 2L Base Unit.

CLEANING THE NOZZLE PLATE

CAUTION: The nozzle plate is delicate and should be treated with care.



Do not attempt to wipe or clean the nozzle plate directly as this will result in the deterioration of print quality. To clean the nozzle plate, use the prime function (see page 49) and rubber wipe blade supplied by Domino.

To maintain the wetting agent (C3000, C1000) and keep the microscopic holes on the nozzle plate free from clogging, clean the nozzle plate using the **prime function** on the main menu. This action forces a small amount of ink through the nozzle plate freeing any clogged holes and removing any dirt or dust particles.

This action should be carried out on the daily start-up and again if any fading or deterioration appears in the print quality.

C6000V HEAD CLEANING

(1) Clean the print head face with either WJ-910 or WJ-911.

(2) To remove spots of ink from the print face, use a swab and gently blot to remove the ink off the print face.

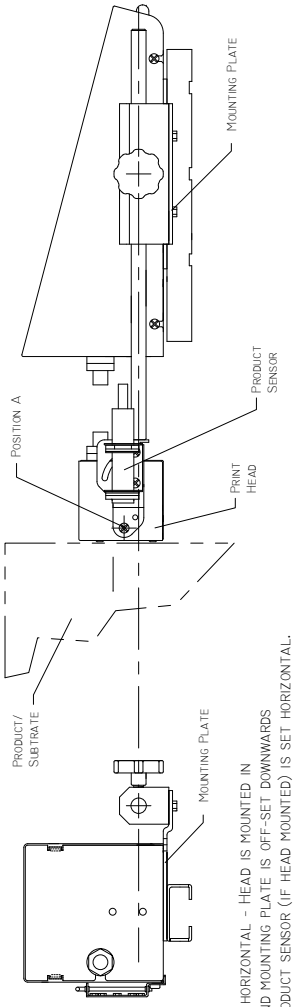
RELOCATING THE UNIT

If the unit needs to be relocated, before moving the unit, ensure that the ship cap is fitted to protect the nozzle plate and to prevent ink leakage if the control unit is tilted.

It is also important to shut off the header tank air flow restrictor valve, so the tank will not leak in transit. If attempting to relocate or move the unit please contact Domino.

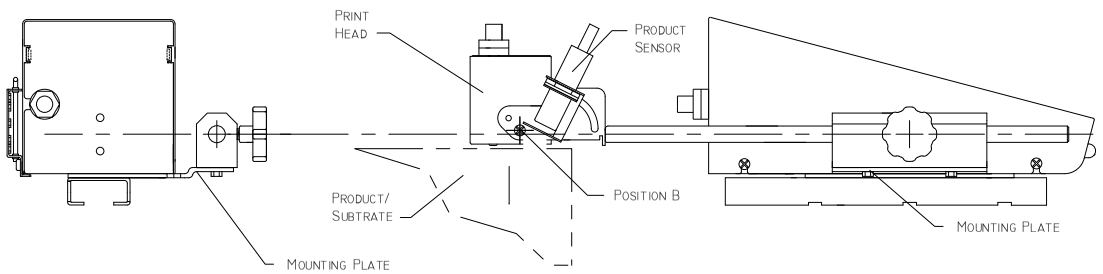
C1000X & C3000X
PRINT HEAD POSITIONING

Print Head Mounting Position When Printing Horizontal



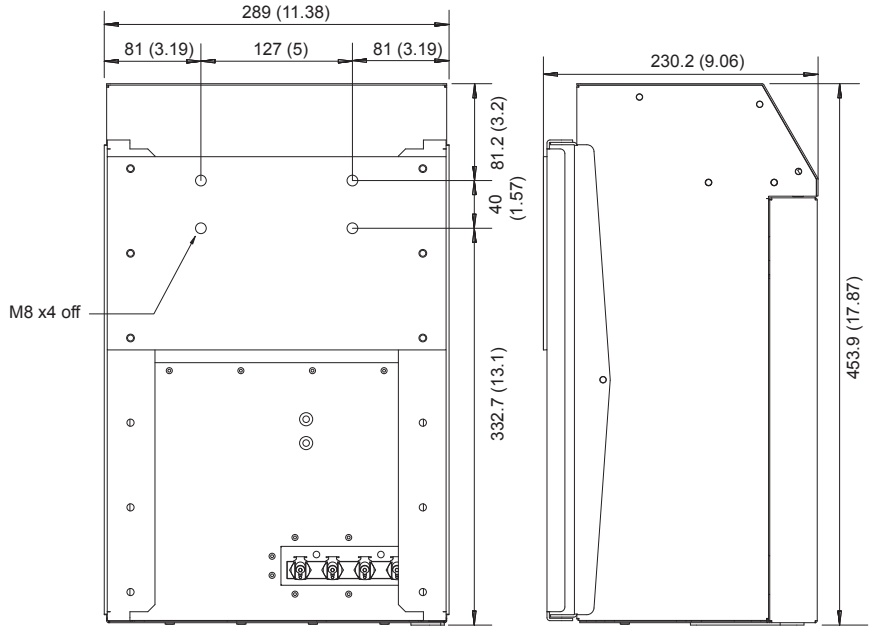
When printing horizontal - head is mounted in position "A" and mounting plate is off-set downwards as shown. Product sensor (if head mounted) is set horizontal.

Print Head Mounting Position When Printing Downwards

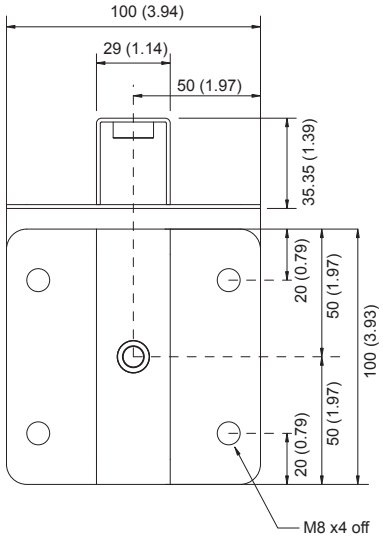


When printing downwards - Head is mounted in position "B" and mounting plate is inverted to upwards off-set position as shown. Product sensor (if head mounted) is rotated as shown.

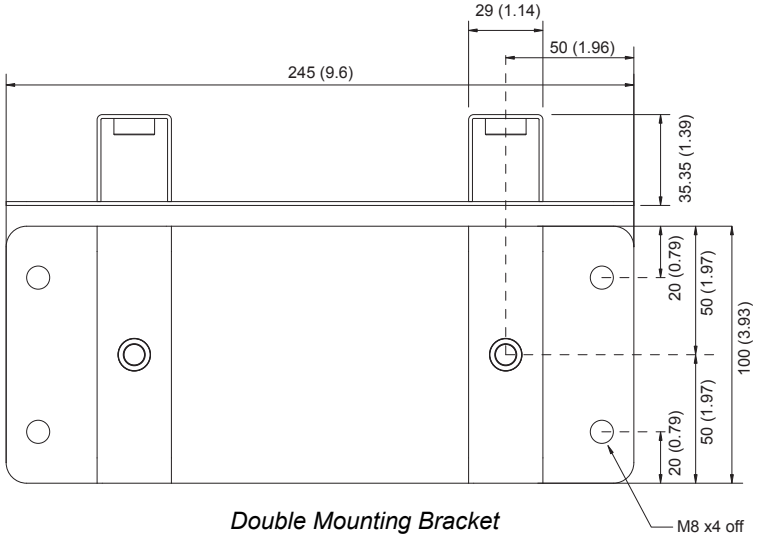
DIMENSION DRAWINGS



Multi-head Base Unit

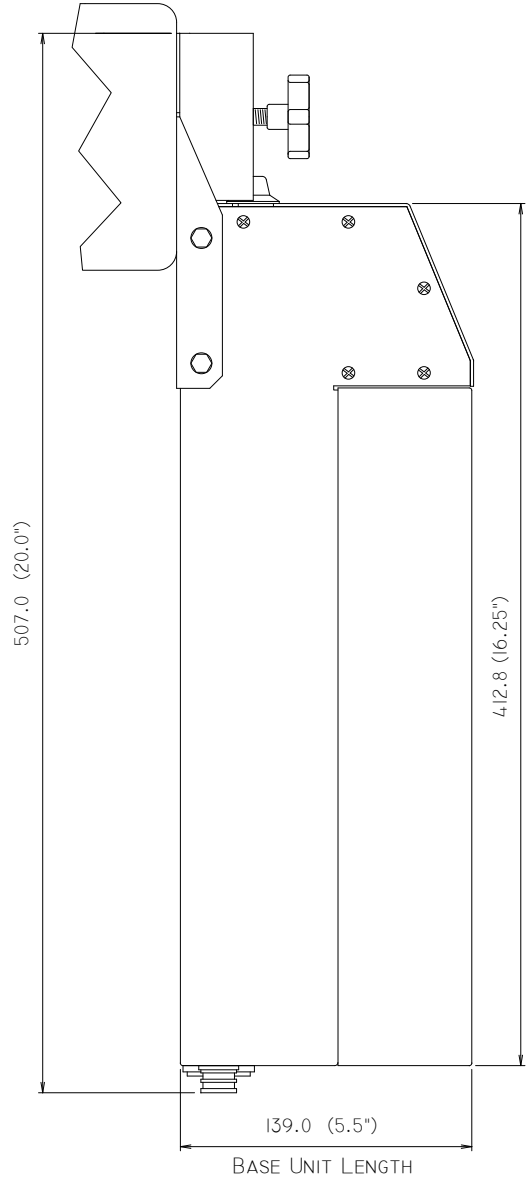


Single Mounting Bracket

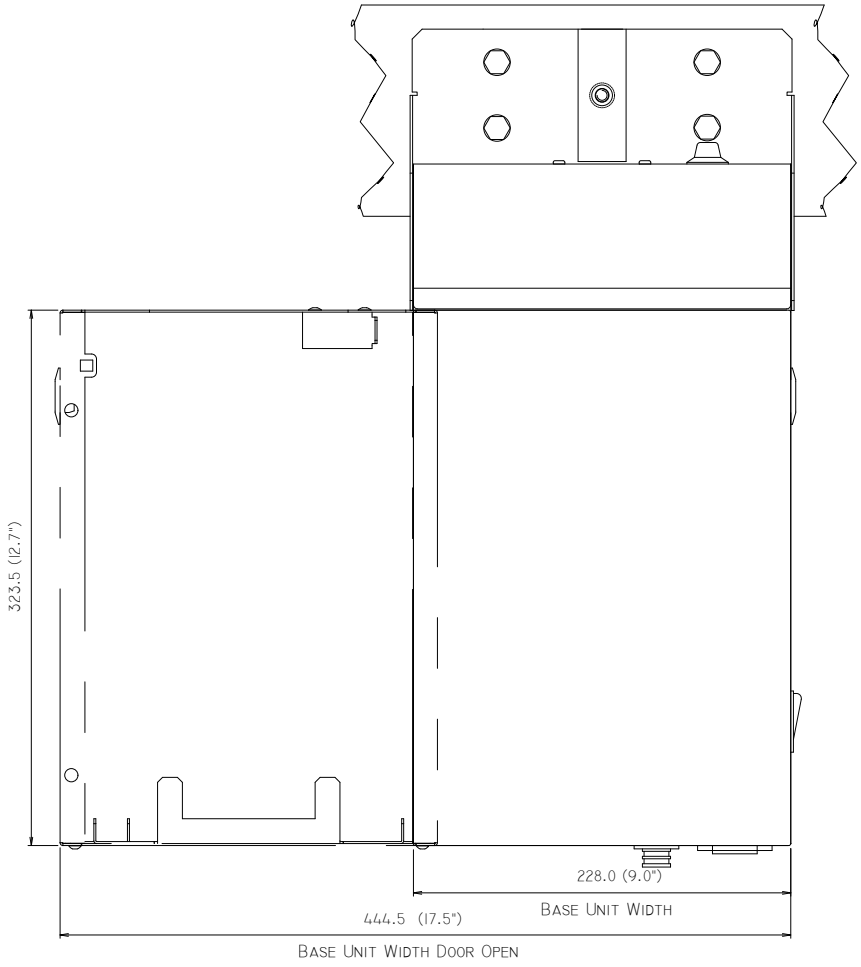


Double Mounting Bracket

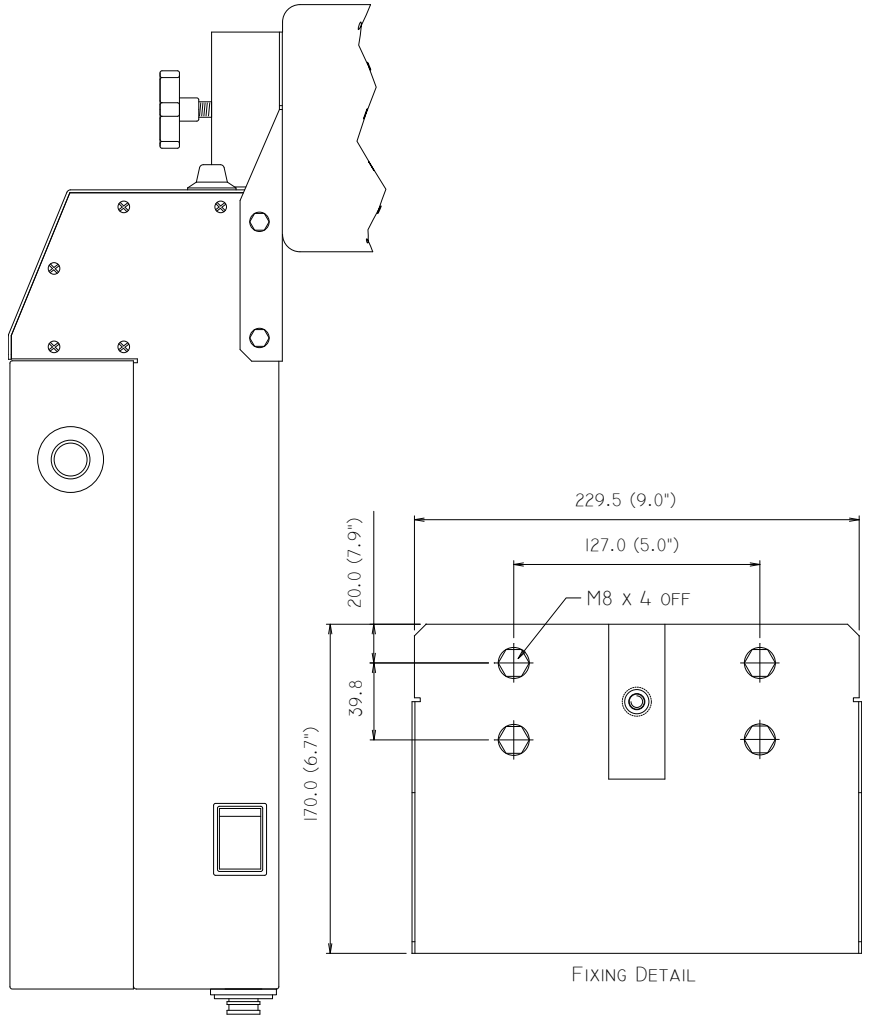
Mounting Brackets



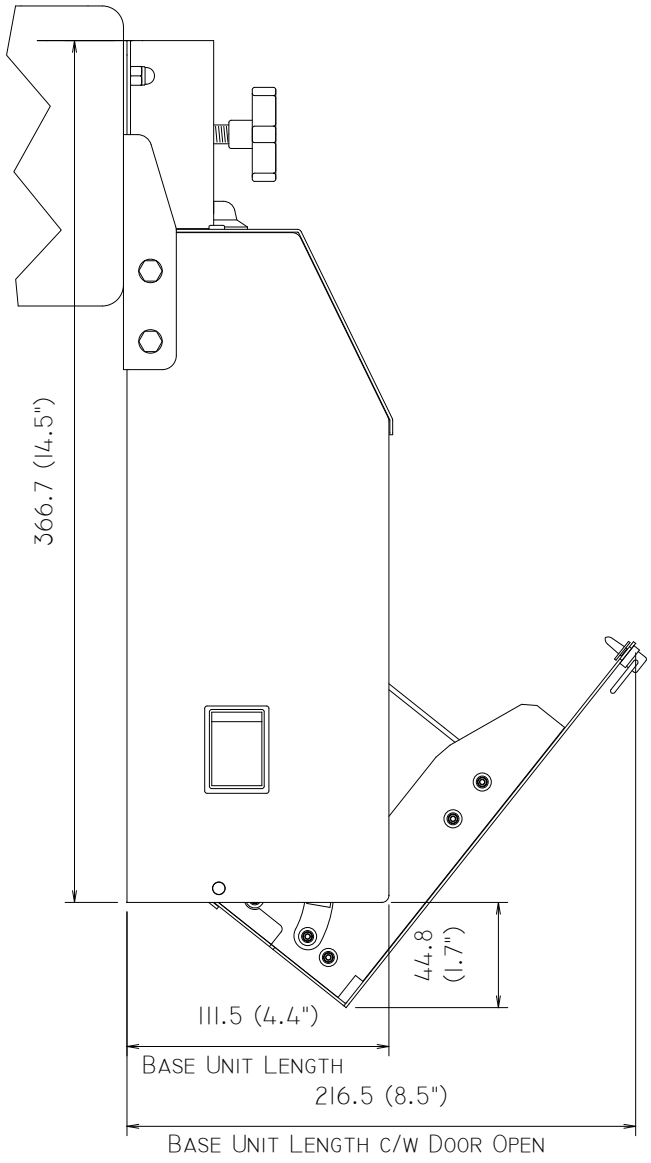
2L Base


323.5 (12.7")
228.0 (9.0")
BASE UNIT WIDTH
444.5 (17.5")
BASE UNIT WIDTH DOOR OPEN

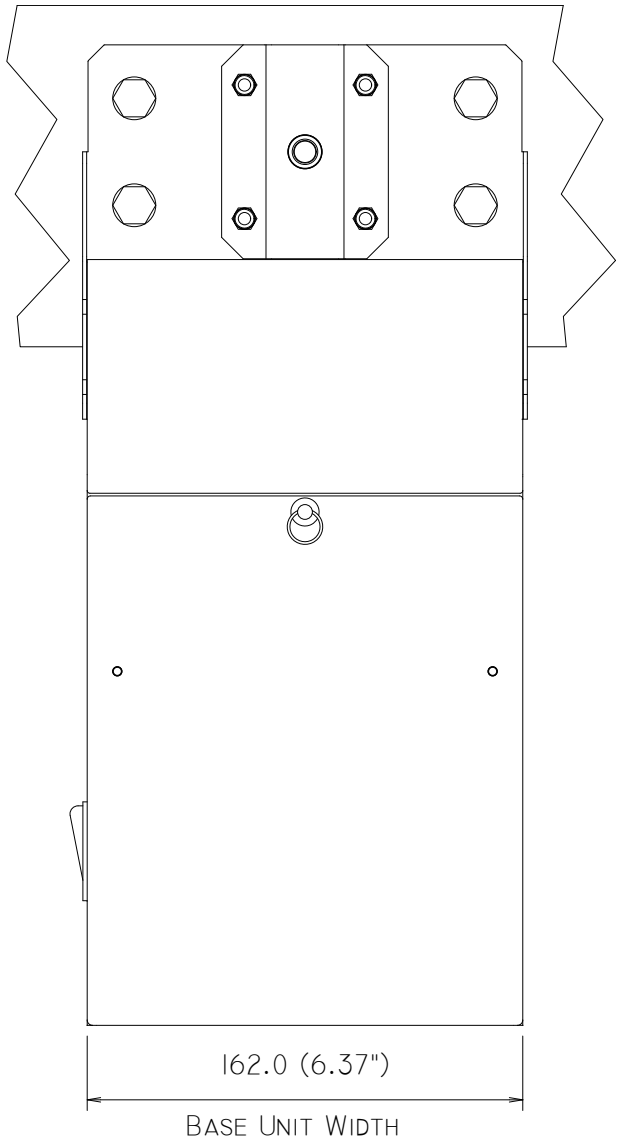
2L Base



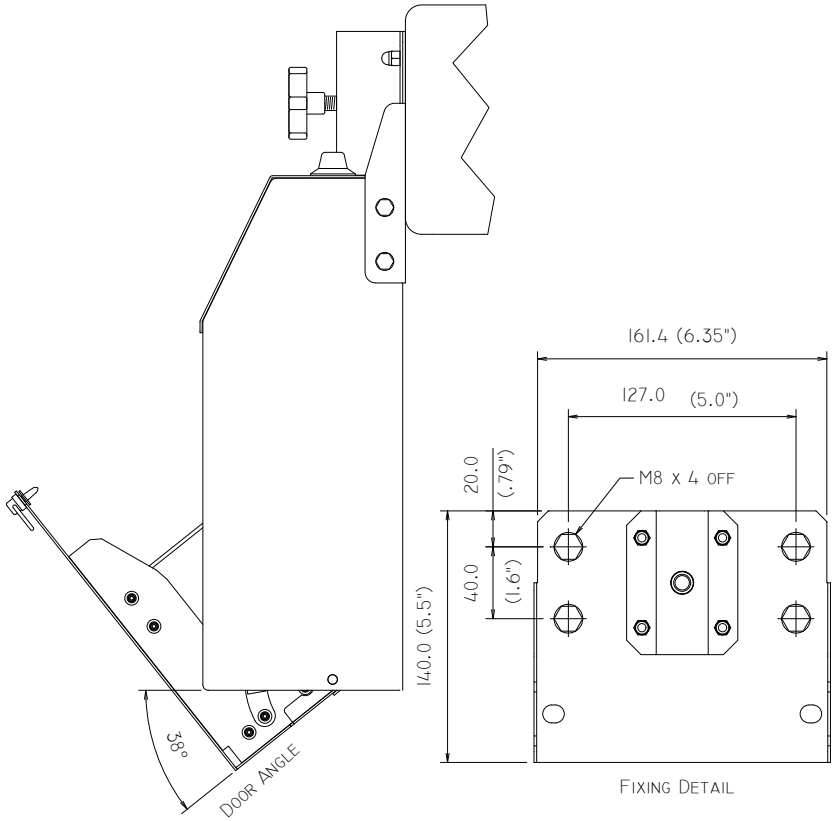
2L Base



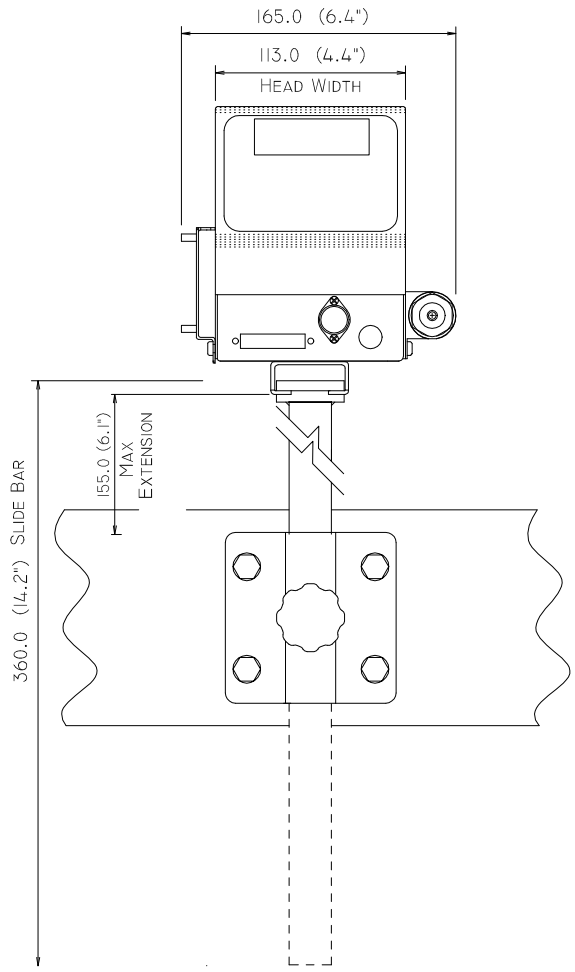
200ml Base Unit



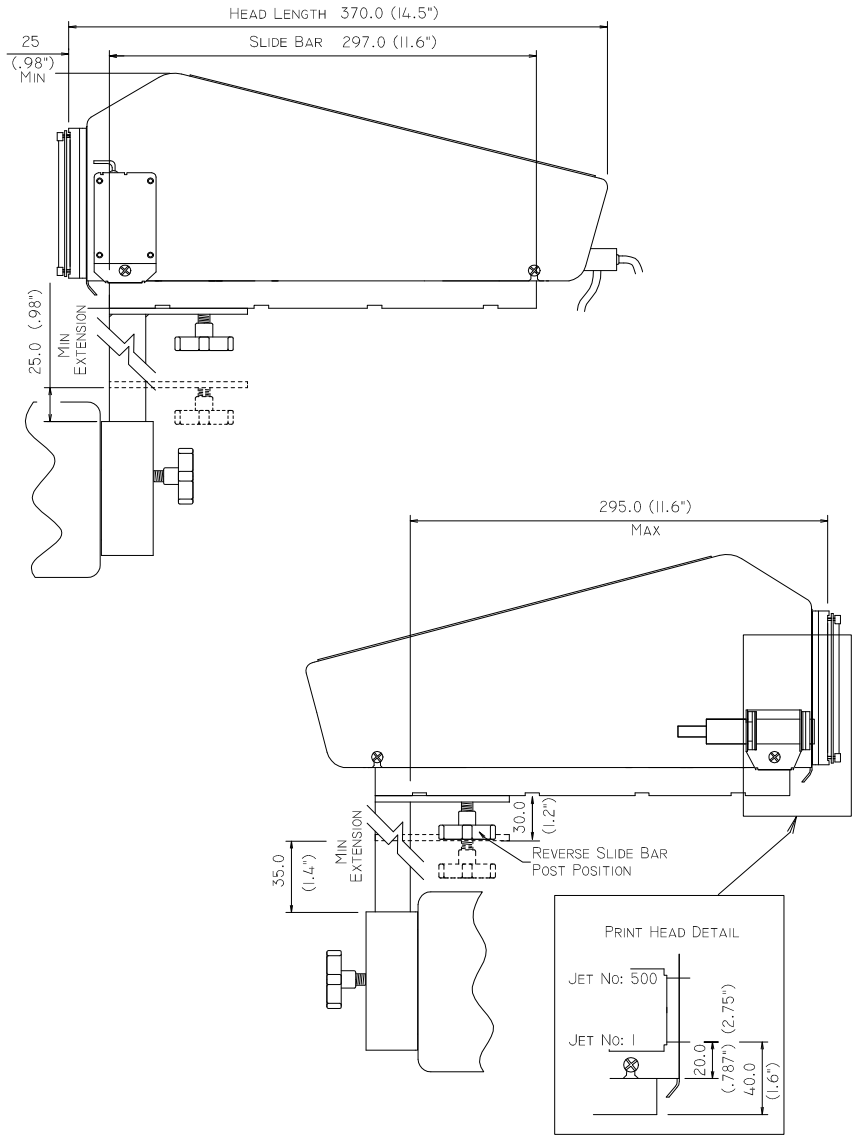
200ml Base Unit



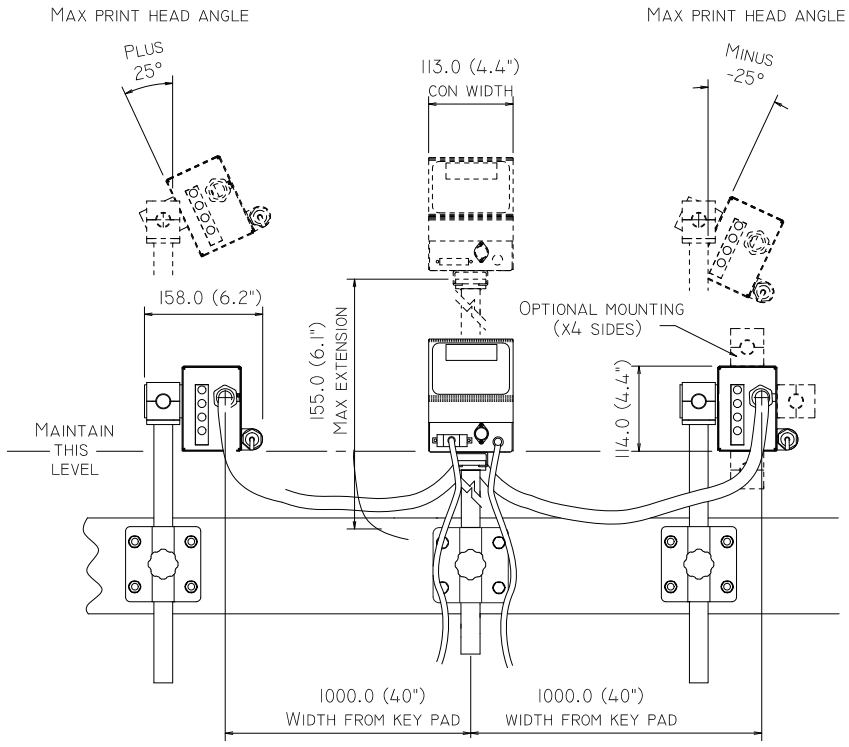
200ml Base Unit

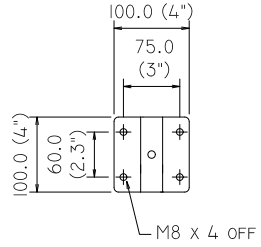

165.0 (6.4")
113.0 (4.4")
HEAD WIDTH
155.0 (6.1")
MAX
EXTENSION
360.0 (14.2") SLIDE BAR

C6000(MF)


HEAD LENGTH 370.0 (14.5")
SLIDE BAR 297.0 (11.6")
25
(.98")
MIN
25.0 (.98")
MIN
EXTENSION
295.0 (11.6")
MAX
30.0
(1.2")
35.0
(1.4")
MIN
EXTENSION
REVERSE SLIDE BAR
POST POSITION
PRINT HEAD DETAIL
JET No: 500
JET No: 1
20.0
(.787")
40.0
(1.6")
(2.75")

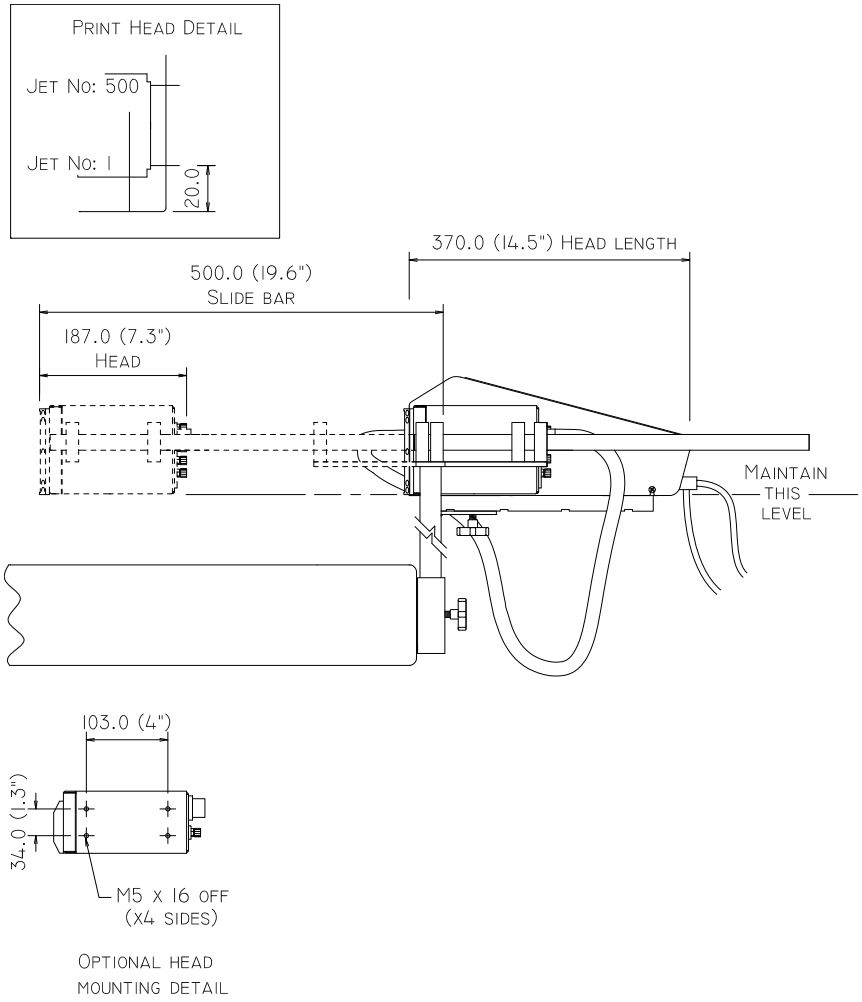
C6000(MF)





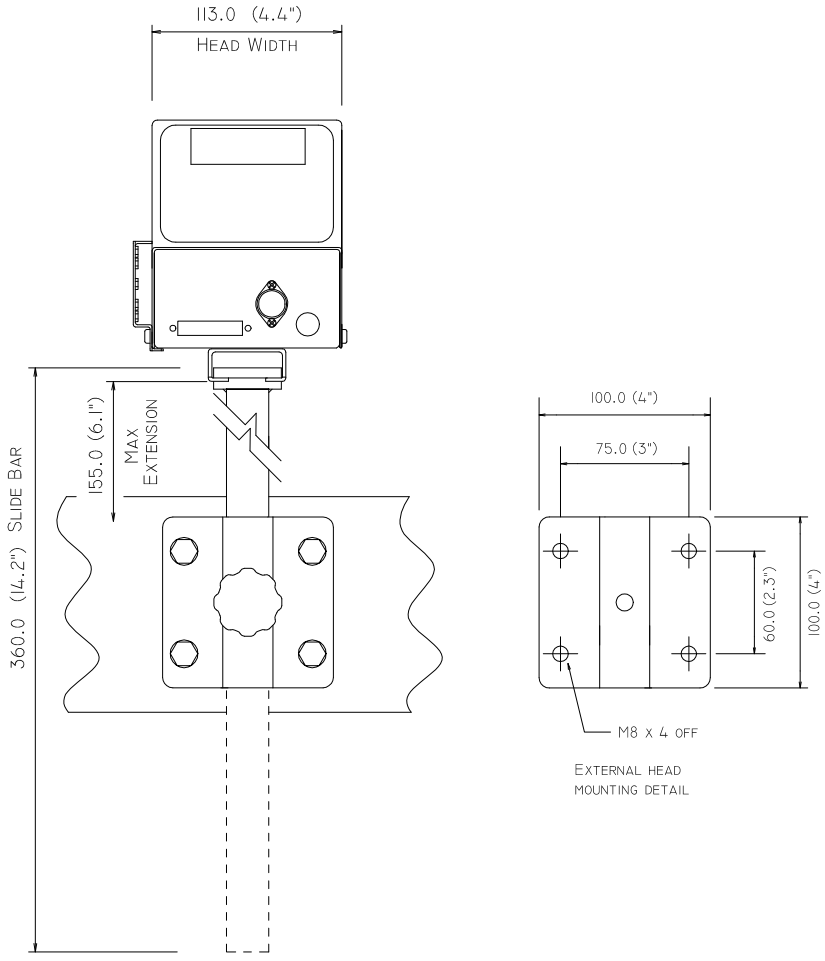
EXTERNAL HEAD MOUNTING DETAIL

C6000i

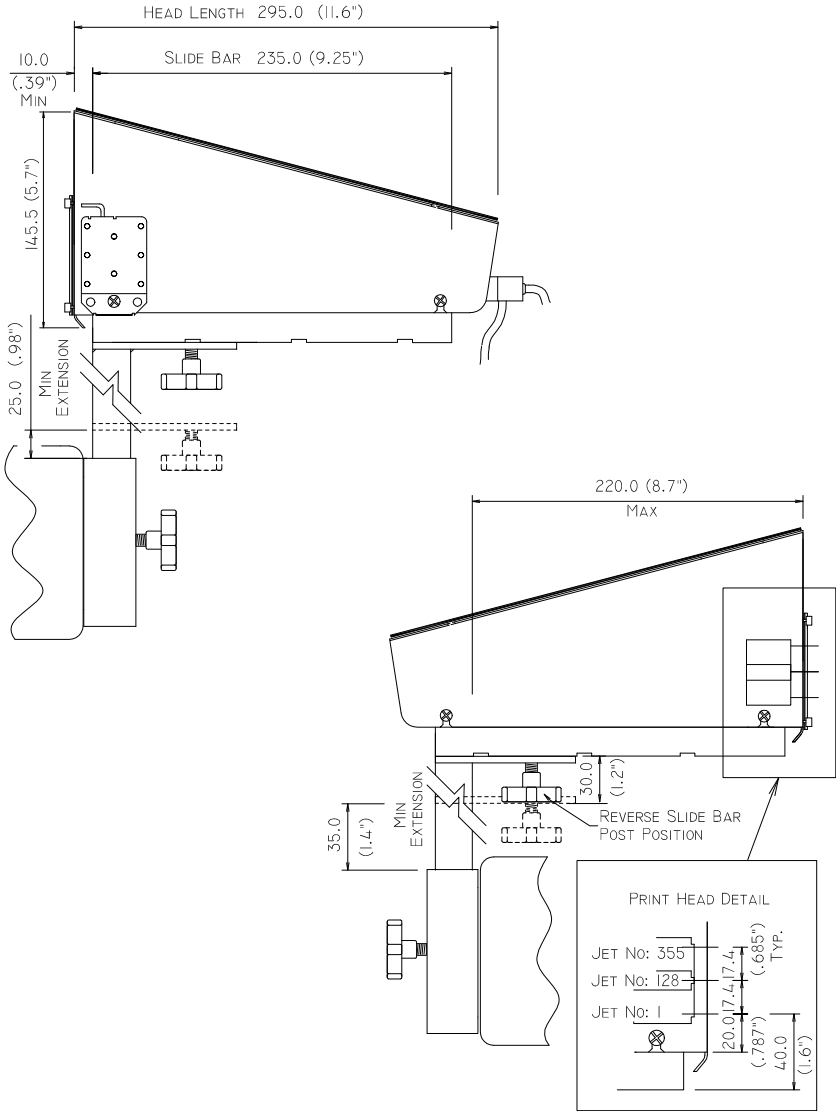


OPTIONAL HEAD
MOUNTING DETAIL

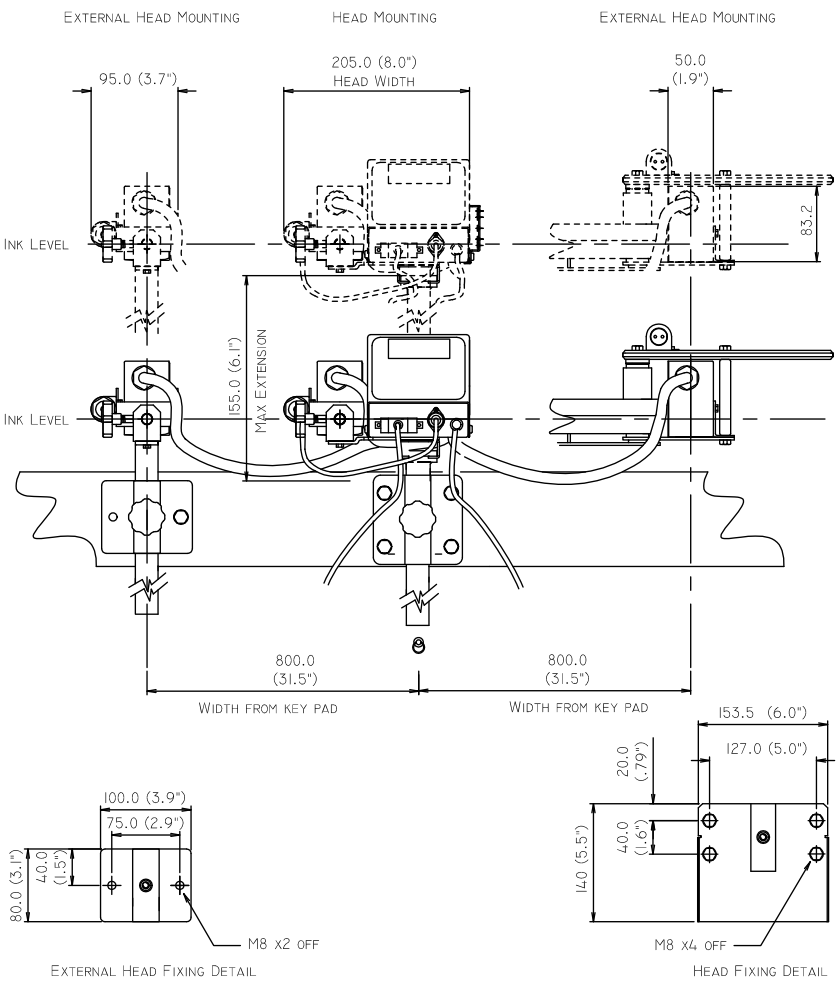
C6000i


113.0 (4.4")
HEAD WIDTH
155.0 (6.1")
MAX EXTENSION
360.0 (14.2") SLIDE BAR
100.0 (4")
75.0 (3")
60.0 (2.3")
100.0 (4")
M8 x 4 OFF
EXTERNAL HEAD
MOUNTING DETAIL

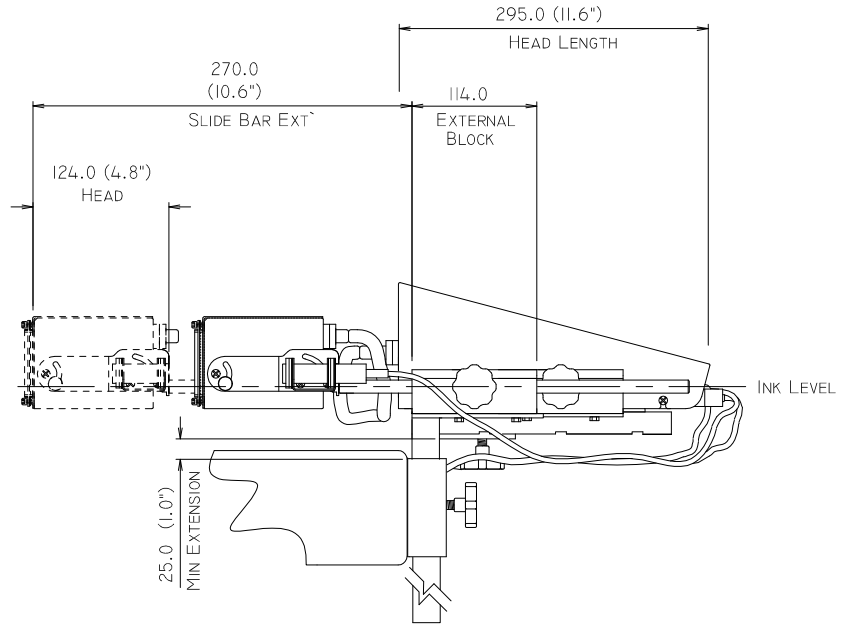
C3000

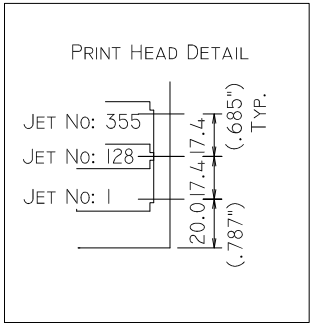

HEAD LENGTH 295.0 (11.6")
10.0
(.39")
MIN
SLIDE BAR 235.0 (9.25")
145.5 (5.7")
25.0 (.98")
MIN
EXTENSION
220.0 (8.7")
MAX
30.0
(1.2")
35.0
(1.4")
MIN
EXTENSION
REVERSE SLIDE BAR
POST POSITION
PRINT HEAD DETAIL
JET NO: 355
JET NO: 128
JET NO: 1
17.4
17.4
(.685")
TYP.
20.0
(.787")
40.0
(1.6")

C3000

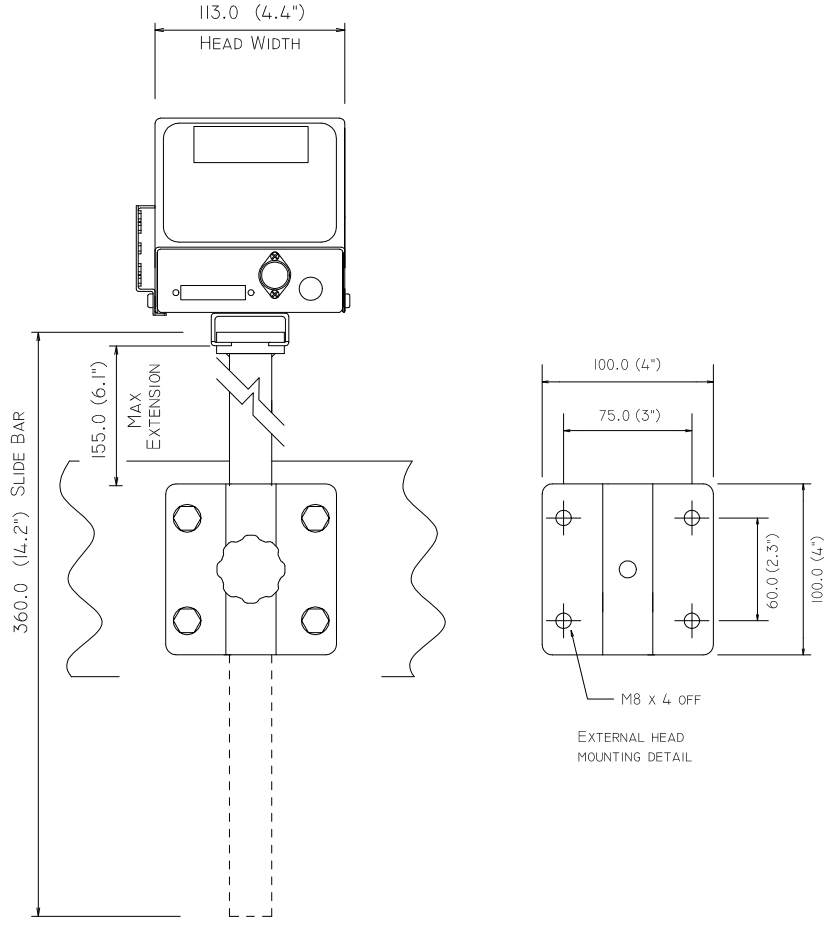

EXTERNAL HEAD MOUNTING
HEAD MOUNTING
EXTERNAL HEAD MOUNTING
95.0 (3.7")
205.0 (8.0")
HEAD WIDTH
50.0
(1.9")
83.2
INK LEVEL
INK LEVEL
155.0 (6.1")
MAX EXTENSION
800.0
(31.5")
WIDTH FROM KEY PAD
800.0
(31.5")
WIDTH FROM KEY PAD
153.5 (6.0")
127.0 (5.0")
20.0
(.79")
40.0
(1.6")
140 (5.5")
100.0 (3.9")
75.0 (2.9")
40.0
(1.5")
80.0 (3.1")
M8 x2 OFF
M8 x4 OFF
EXTERNAL HEAD FIXING DETAIL
HEAD FIXING DETAIL

C3000X

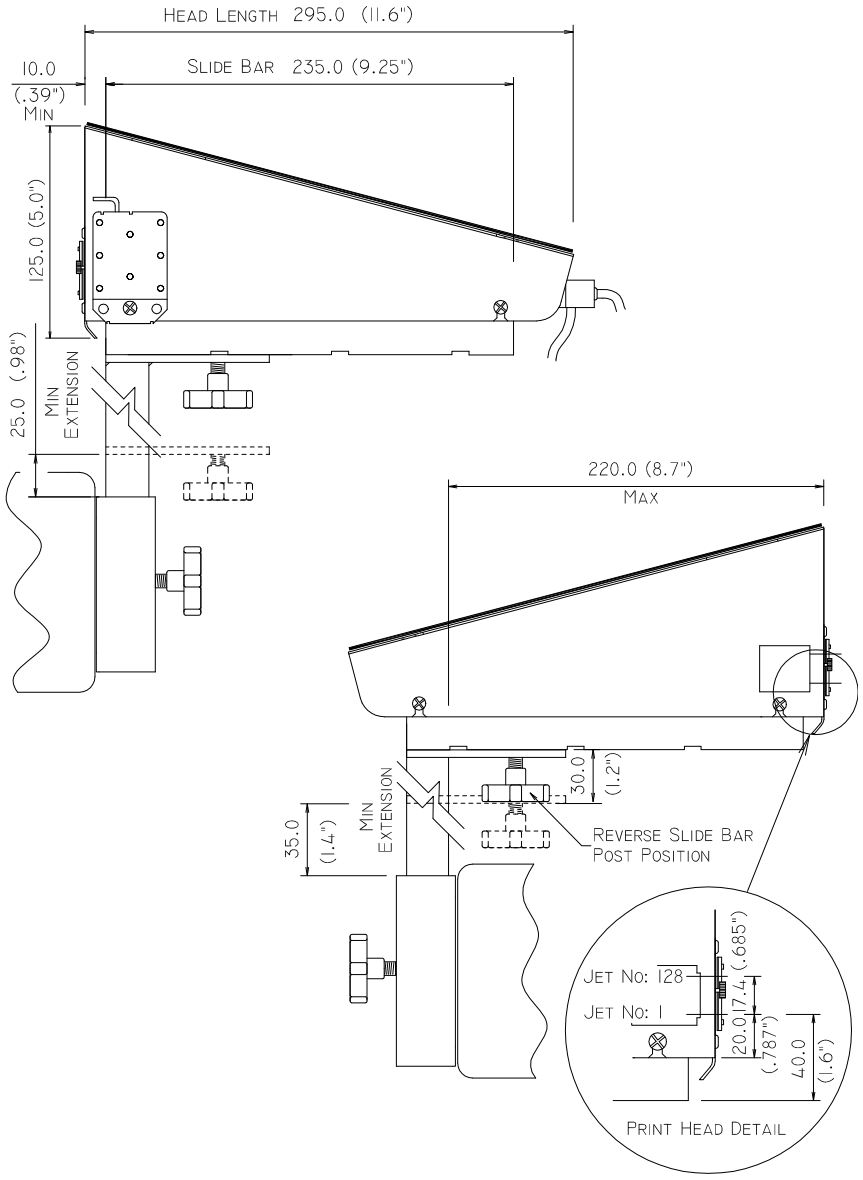

295.0 (11.6")
HEAD LENGTH
270.0
(10.6")
SLIDE BAR EXT`
114.0
EXTERNAL
BLOCK
124.0 (4.8")
HEAD
INK LEVEL
25.0 (1.0")
MIN EXTENSION


PRINT HEAD DETAIL
JET NO: 355
JET NO: 128
JET NO: 1
17.4
17.4
20.0
(.685")
TYP.
(.787")

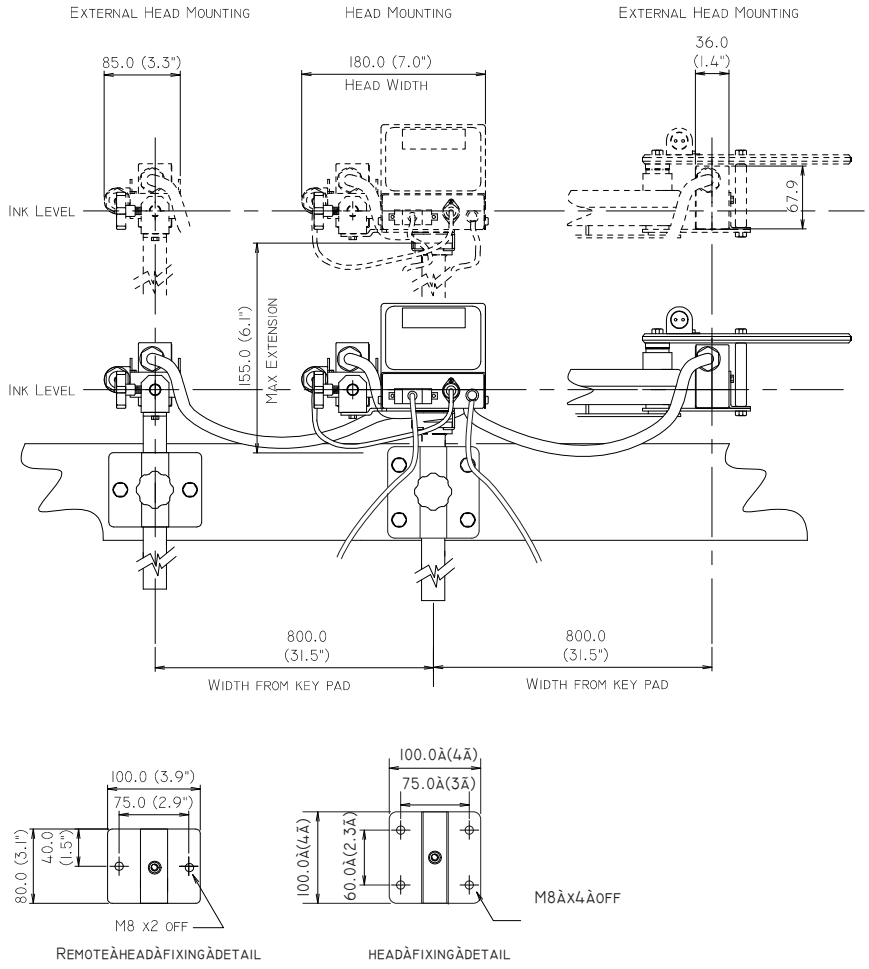
C3000X


113.0 (4.4")
HEAD WIDTH
155.0 (6.1")
MAX EXTENSION
360.0 (14.2") SLIDE BAR
100.0 (4")
75.0 (3")
60.0 (2.3")
100.0 (4")
M8 x 4 OFF
EXTERNAL HEAD
MOUNTING DETAIL

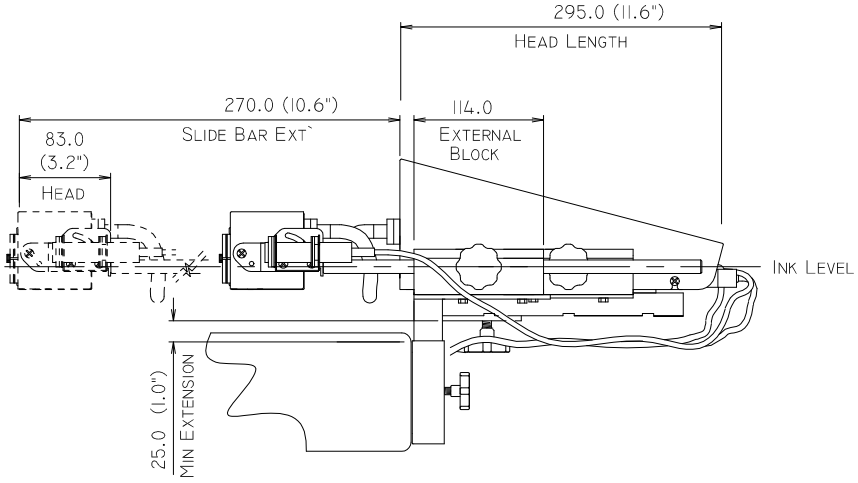
C1000

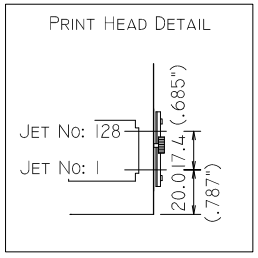

HEAD LENGTH 295.0 (11.6")
SLIDE BAR 235.0 (9.25")
10.0
(.39")
MIN
125.0 (5.0")
25.0 (.98")
MIN
EXTENSION
220.0 (8.7")
MAX
30.0
(1.2")
35.0
(1.4")
MIN
EXTENSION
REVERSE SLIDE BAR
POST POSITION
JET No: 128
JET No: 1
17.4 (.685")
20.0
(.787")
40.0
(1.6")
PRINT HEAD DETAIL

C1000


EXTERNAL HEAD MOUNTING
HEAD MOUNTING
EXTERNAL HEAD MOUNTING
85.0 (3.3")
180.0 (7.0")
HEAD WIDTH
36.0
(1.4")
67.9
INK LEVEL
155.0 (6.1")
MAX EXTENSION
INK LEVEL
800.0
(31.5")
800.0
(31.5")
WIDTH FROM KEY PAD
WIDTH FROM KEY PAD
100.0 (3.9")
75.0 (2.9")
80.0 (3.1")
40.0
(1.5")
M8 x2 OFF
REMOTEàHEADàFIXINGàDETAIL
100.0à(4ã)
75.0à(3ã)
100.0à(4ã)
60.0à(2.3ã)
M8àx4àOFF
HEADàFIXINGàDETAIL

C1000X


295.0 (11.6")
HEAD LENGTH
270.0 (10.6")
SLIDE BAR EXT`
114.0
EXTERNAL BLOCK
83.0
(3.2")
HEAD
INK LEVEL
25.0 (1.0")
MIN EXTENSION


PRINT HEAD DETAIL
JET No: 128
JET No: 1
20.0
17.4 (.685")
(.787")

C1000X

TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
LCD not working	Control unit power cable from base unit not plugged in correctly	Turn off mains power and check the control unit interconnections.
	Mains fuse blown	Replace the mains fuse in the plug.
	Mains power cable not attached to base unit correctly	Turn off mains power, refit the mains cable ensuring it is in the correct position
	Base unit power not switched on	Check the On/Off switch at the top of the base unit is illuminated
LCD shows corrupted, jumbled and unfamiliar characters	Problem with the LCD	Contact Domino for service
Unable to recall messages	Control unit memory has been wiped	If necessary download data from computer or re-enter message information from back-up notes
	Problem with the keypad	If the LCD is not lit then contact Domino for service
One or more keys not responding on the keypad	Non-usable key being pressed in particular menu	Ensure the correct key is being pressed, there are keys that are not used in certain functions or menus
	Problem with the keypad	Contact Domino for service

Problem	Possible Cause	Possible Solution
Unable to exit from particular function or menu icon	Incorrect key being pressed	Refer to "Control Unit keypad Layout" (on page 53 onward) for the correct keystroke
	System has stopped responding	Reboot the unit, if the problem still persists, contact Domino for service
LCD screen too dim to read	Cover screen is scratched or dirty	Clean control unit with Domino cleaning solution
	Problem with LCD screen	Contact Domino for service
Sensor misses item when counting	Sensor lens dirty	Clean lens with Domino cleaning agent
	Print surface too far away	Use external sensor or use guidance rails on conveyor
	Print surfaces bunching up on the conveyor	Ensure there is a big enough gap between surfaces
Sensor activates when no items are passing	Sensor is triggered by excessive movement, bright flashing lights or direct sunlight.	Relocate the unit to an area with less activity and flashing lights
Sensor causes printing more than once on the same item	Sensor detecting holes or black areas on the print surface	Use an external sensor positioned to avoid the effected areas

Problem	Possible Cause	Possible Solution
Control unit not printing or the print fades then disappears	Nozzle plate ship cap on	Remove the nozzle plate ship cap.
	Header tank out of ink	Check the ink out indicator and replace the ink bottle
	Control unit port faulty	Check cable connections and ensure the QR plug is undamaged. If it is damaged contact Domino for advice
	Print head faulty	Contact Domino for service
	Header tank air vent valve in the closed position	Remove control unit cover and open vent
Print too high or low on print surface	Control unit set too high or low in relation to the conveyor	Lower or raise the control unit assembly on the mounting bracket
Print uneven or juddery 	Conveyor movement not smooth or constant	Install a shaft encoder to compensate
	Control unit is being subjected to vibration	Relocate the unit near less vibration
Print too far to the right or left of the print surface	Delay setting incorrect	Change the delay setting in the parameters menu
Message prints back to front or upside down	Message direction and orientation set incorrectly	Readjust these settings through the main menu bar
Print out too large or small	Message set incorrectly	Check the message is set correctly in message editor

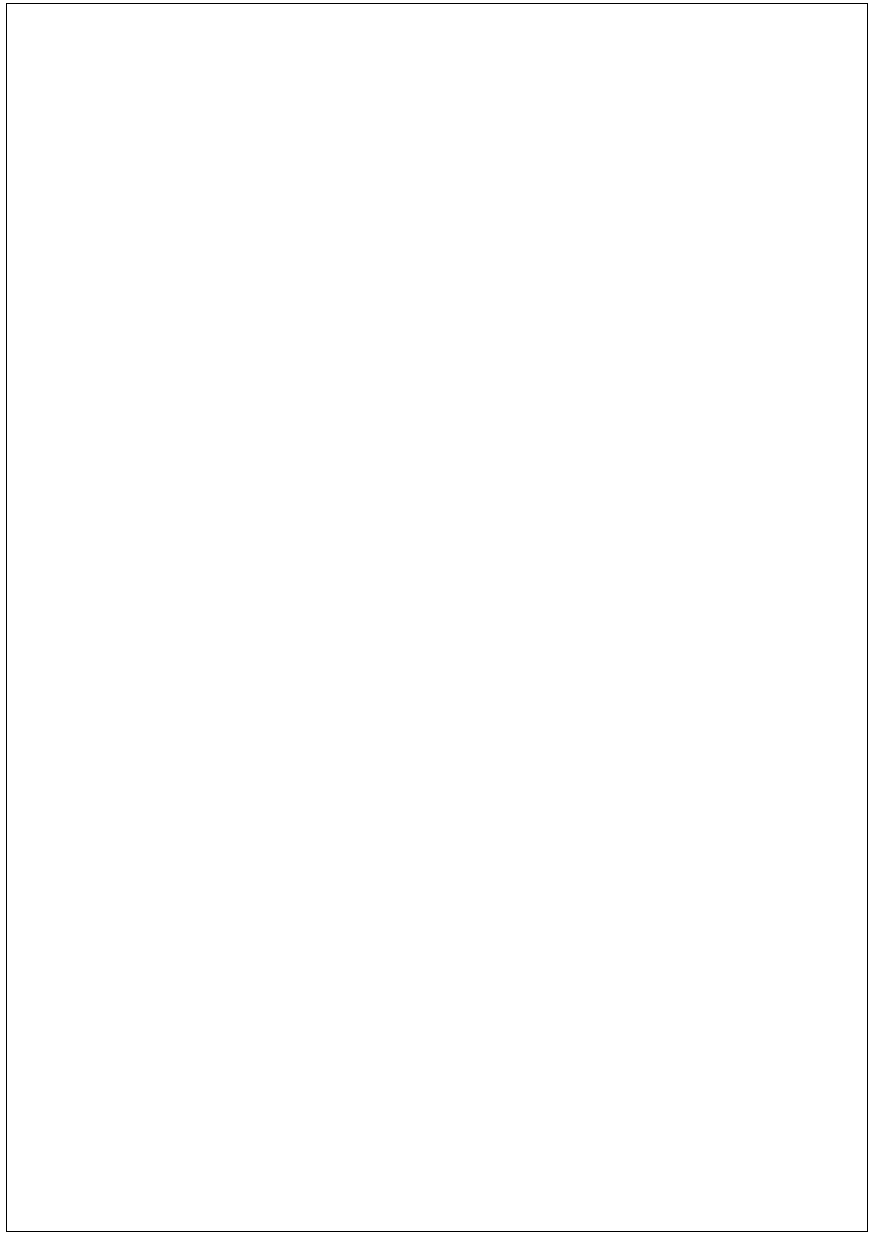
Problem	Possible Cause	Possible Solution
Incorrect date code or sell by date printed	System date set incorrectly	Change the system date under the main menu bar
	Message set incorrectly	Check the message is programmed correctly
One or more channels not printing 	Dust or dirt on the nozzle plate	Prime the print head to clean the nozzle plate (see page 49)
	Header tank level may not be set correctly	Contact Domino for service
One or more dots missing from print (particularly at bottom) (Remote or Inclined print head only)	Controller too low in relation to print head	Raise controller slightly, observing the print until the dot(s) reappear
Print out appears fuzzy 	Gap between print surface and nozzle plate too great	The farther away the print surface, the higher the degradation of the print out. The print surface should be kept at the 1.5mm minimum distance
Print out too light 	Dpi set too low	Adjust dpi value in parameters menu
Text or graphics look distorted compressed or expanded 	Speed of ink delivery is too fast or slow in relation to the speed of the conveyor	Adjust speed under the parameters menu or install a shaft encoder

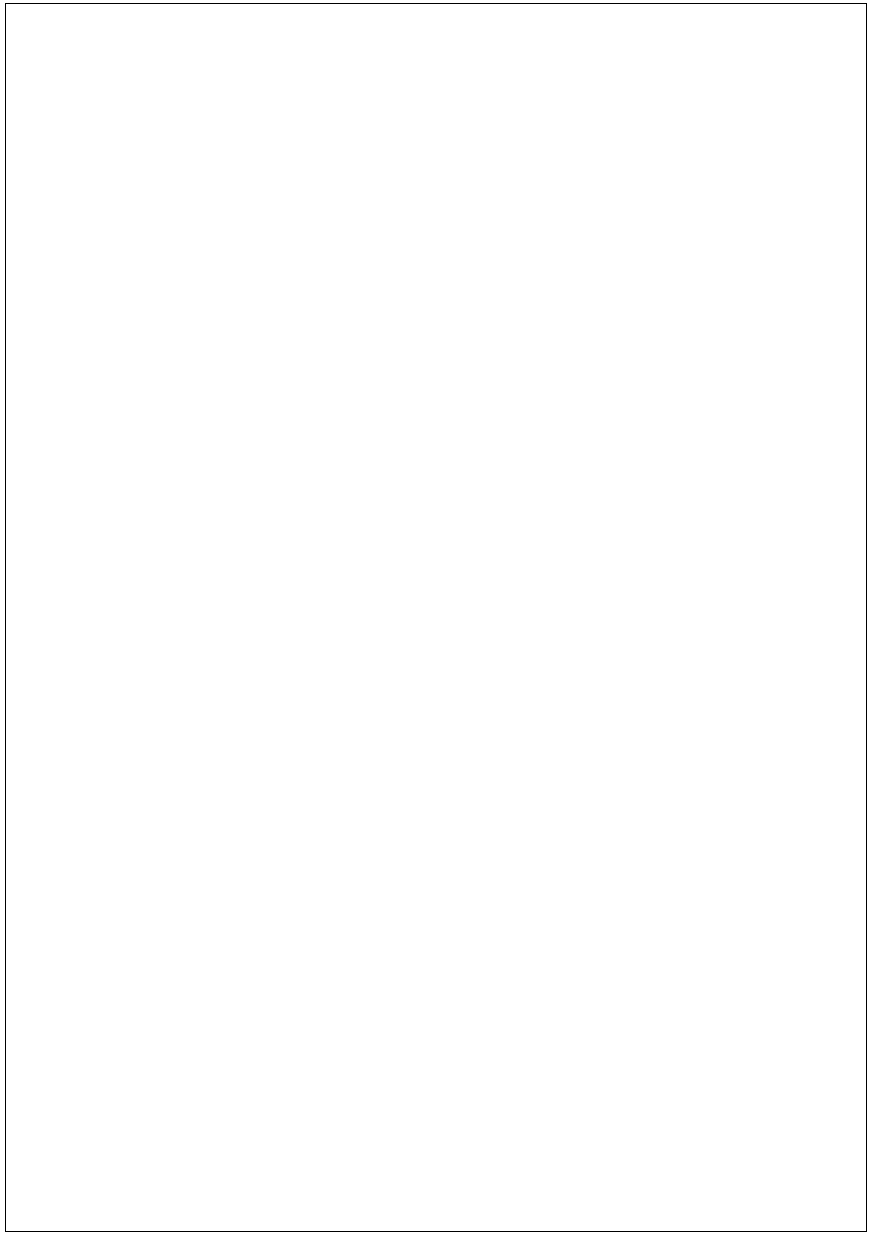
Problem	Possible Cause	Possible Solution
Ink leaking from control unit head or base unit body	Ink line damaged or loose	Power down unit, locate damaged component, clear up ink spill and contact Domino for service
	Damaged valve in base unit	Power down unit, clear up ink spill, contact Domino
	QR connector to the control unit damaged	Power down unit, clear up ink spill, contact Domino
	Ink overfilling header tank and leaking back through tank vent and control valve (MR-191 Failure)	Power down unit, clear up ink spill, contact Domino for service
Ink weeping from print face (Inclined Print Head)	Print head and control unit not at same height	Adjust the print head to the same height as the control unit (see page 27)
	Print head at an angle of more than 25°	Re-adjust print head to an angle of 25° or less (see page 30)
Ink out warning flashing	Ink is out	Replace the ink bottle
	Base door open	Close base door

OPERATOR NOTES

MESSAGE NOTES

Use the spaces provided on the following pages to record your message assignments and notes, for quick reference.





INDEX

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