

Little David®

MicroJet I™

MicroJet I Plus™

MicroJet II™

MicroJet III™

MicroJet III HC™

INK JET CODER

by

LOVESHAW
an **ITW** Company



Operator's Manual

P/N CPM200-MJ-LT



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INTRODUCTION

Little David Ink Jet Printers



Introduction

The MicroJet is a simple, low cost, standard, large character ink jet coder. It is totally enclosed and completely self-contained. Measuring only 13" x 6" x 5", the MicroJet has been designed for easy installation on any standard conveyor line, minimal maintenance and maximum flexibility.

Standard features include: 5x5 dot matrix on the MicroJet I; 7x5 on the MicroJet I Plus; dual 5x5 to 11x6 dot matrix printing on the MicroJet II; and three 5x5s to 11x6 + one 5x5 dot matrix print on the MicroJet III. All units include bold double dotting at speeds up to 200 feet per minute. Automatic date and time coding, day of the week designation, Julian dating, alpha/numeric incrementing, automatic box counting, lockout capability and complete keyboard are also included. Keys are also provided for print control of dot size, product delay and automatic character width.

The MicroJet is user friendly in every way. Its small size and sophisticated capabilities combine with extraordinary ease of installation, maintenance and operation, for the ultimate in satisfaction – at low cost.

Made of sturdy steel, the MicroJet is also available in stainless steel.

This Manual is designed for quick reference to the various features of the MicroJet.

(Personal Protection Equipment like safety glasses and other protective gear should be worn when using ink jet printers.)

INSTALLATION

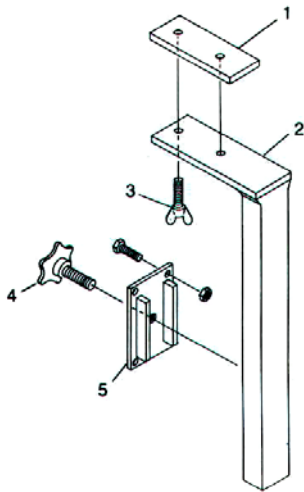


Figure 1. L- Bracket.

Installation

Locate the following parts in the MicroJet:

- ◆ Mounting Block Assembly with Hand Knob (#5). P/N CPMA75-126.
- ◆ L-bracket Assembly (#2) with Thumbscrews (#3) and Clamping nut (#1). P/N CP01-001/A-B.
- ◆ Secure Mounting Block Assembly (#5) with opening vertical to the support structure that will hold the MicroJet. Use supplied hardware to secure Mounting Block to structure.
- ◆ Insert the L-Bracket Assembly (#2) through the Mounting Block Assembly (#5) and tighten Hand Knob (#4).
- ◆ Loosen Thumbscrews (#3) on the top of the L-bracket Assembly (#2).
- ◆ Slide the Clamping Nut (#10) into the MicroJet mounting channel (running the length of the unit on the bottom).
- ◆ Slide the MicroJet into position and tighten Thumbscrews. Retighten the Hand knob (#4).
- ◆ Remove the transformer from the shipping box. Making sure the MicroJet ON/OFF switch is in the OFF position, plug the primary cord into an isolated 115 VAC line.
- ◆ Connect the secondary cord of the transformer to the connector located under the ON/OFF switch on the back of the unit.

NOTE: It is highly recommended that a line conditioner/regulator be used with the MicroJet (see Optional Spare Parts on page 33).

OPERATION

Operation

The MicroJet ink coder is not shipped with the ink container in position. Ink is shipped separately in its own shipping case.

NOTE: "USE OF ANY INK NOT CONFORMING TO LOVESHAW'S SPECIFICATIONS WILL VOID THE UNIT WARRANTY."

- ◆ Turn unit off before installing the ink bottle.
- ◆ The ink container compartment is located in the back of the unit.
- ◆ Twist off plastic shipping cap and set aside.
- ◆ The brass cap insert found inside the MicroJet has a large pin (air) and a small pin (ink) that must be inserted into the container. Be sure the pins are in their proper positions (air pin on top, next to the label) before penetrating the membranes.
- ◆ Press brass cap insert into position and tighten the brass screw cap. (Brass insert and cap must remain flat while torque is applied.
- ◆ To avoid printing while setting up, avoid passing anything in front of unit that may accidentally trip the photocell.
- ◆ Turn the unit on and allow the pressure to build (10 seconds).
- ◆ Check for proper seal of brass cap and insert.
- ◆ With an open container in front of the nozzle plate, hold the purge switch down until ink streams from the Nozzle Plate. The Ink Container should be half out so that the Reservoir fills up and low ink light goes out. Once the light goes out the ink bottle can be pushed all the way in and the Reservoir moved in the printing position.

Reservoir in Purge Position



Reservoir being pushed into Printing Position



OPERATION

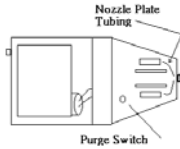


Figure 2. Unit start-up.

- ◆ Backflush any nozzle that does not give a straight and steady stream of ink (see Figure 26 on page 31).
- ◆ **The MicroJet unit is now ready to be programmed to print.**
- ◆ The LCD screen will show the software version and the word "LOCKED". Unlock the MicroJet by entering the unlock code: **5 8 6 3 4 3 4**. When the correct unlock code has been entered, the LCD screen will show a test message, be blank, or show the last message printed.
- ◆ To enter your message, press **EDIT** key. There will be a blinking cursor on the upper left side of the LCD screen.
- ◆ Press the character keys to create your message. It will show up in the LCD screen. Remember that a message line is 39 characters maximum. (Special software for more characters). Spaces are included in the character count.
- ◆ Use the arrow ← → keys to move the cursor to make any necessary corrections as you prepare your message.
- ◆ When your message is complete, press **ENTER** and your message will print after a box passing in front of the unit has activated the photocell.

PLEASE NOTE...THE MICROJET IS DESIGNED TO PRINT WHILE MOUNTED IN A HORIZONTAL POSITION ONLY. FOR OPTIMUM PERFORMANCE, DO NOT ATTEMPT TO MOUNT IN A VERTICAL POSITION.

A VERTICAL PRINT OPTION IS AVAILABLE – PART NUMBER CPMA75-219.

KEYBOARD and DISPLAY

Printing

The MicroJet will not print when a feature is being used. The **ENTER** key should always be pressed when finished with a feature, or printing can't occur. If there is any doubt about this, just press **ENTER** a few more times. (Some features require the sequence **MENU, ENTER** to exit).

NOTE: BOLD CAPITAL LETTERS USED IN THE TEXT OF THIS MANUAL DENOTES A KEY ON THE KEYPAD.

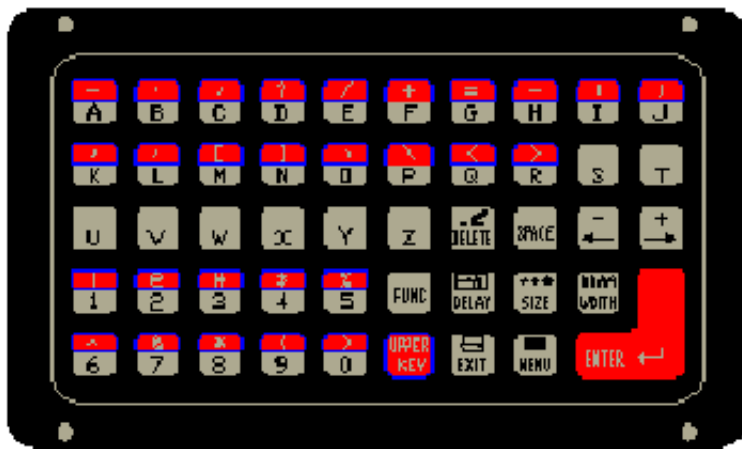


Figure 3. Keyboard and Display.

Keyboard and Display

The keyboard and display are used to “set-up” the MicroJet to print any desired message. The keyboard is used mostly for entering messages to be printed, but is also used to adjust MicroJet features.

To use any MicroJet features, including entering or changing print messages; a “command” key must be used. The keyboard has various kinds of keys on it, including the command keys.

KEYBOARD and DISPLAY

Character Keys contain all the characters in the alphabet, numbers and various figure characters.

SPACE is like a typewriter space key and is used to put blanks into printed messages.

Control Keys

There are six control keys among the keys on the bottom two rows of the keyboard.

UPPER KEY When the upper key is pressed and then one of the letter keys with a “figure” shown on the key top is pressed, the figure character is entered instead of the letter. These figure characters are used when entering print messages.

FUNC When the FUNC key is pressed and then one of several letter keys is pressed, special “functions” are activated; these functions are only used when entering print messages,

ENTER Pressed to “enter” a number or command when adjusting MicroJet features.

DELETE Removes characters or numbers.

← Arrow used when entering decrementing numbers and print messages scrolling.

→ Arrow used when entering incrementing numbers and print messages scrolling.



KEYBOARD and DISPLAY

Command Keys are five command keys: **DELAY**, **SIZE**, **WIDTH**, **EDIT** and **MENU**. These command keys are used to activate MicroJet features. **EDIT** is used to enter or change print messages, **DELAY**, **SIZE** and **WIDTH** adjust printing, and **MENU** provides access to many other features.

Purge

After entering the LOCK code, pressing **A** and then **P** will clean the nozzles. Pressing **P** again turns it off. This is a pulse purge, a manual purge button is also inside the chassis. PLEASE NOTE: Before using either the manual purge or the pulse purge a receptacle to catch the ink should be in place.

Numbers

When a command key is pressed, the screen displays a message about the selected feature. Many of the features will print a number and allow the operator to adjust it. This can be done by pressing number keys or by using the ← and → control keys to make the number larger or smaller. Pressing **DELETE** makes the original number reappear; pressing **SPACE** after a number key is used will “back-up”.

Finally, pressing **ENTER** sets the feature to the displayed number. The MicroJet automatically prevents “out-of-range” numbers.

Mistakes

If you press a wrong key—for instance, using a key other than a command key when trying to select a feature—the MicroJet will display a blinking error message for about four seconds; often the error message will include some information about the correct keys that should be pressed.

Command Key Features

DELAY Adjusts the time after a box is detected before printing is started.

SIZE Adjusts the size of the dot; how much ink is used to print a message.

WIDTH Adjusts the width of a message; a smaller number makes the message narrower.

EDIT The **EDIT** command key is used to type in print messages. After pressing **EDIT**, press the letter, numbers or spaces that should appear in the print message; if unwanted characters are in the message – from a previous message, for instance – use **DELETE** or the **SPACE** key to erase them. Figure characters are put into a message by pressing **UPPER KEY** plus the letter with the desired figure character shown above it.

There are seven special printing effects that can be put into a message: time, expiry, bold, count, pallet count and high and medium characters. (High and medium characters must be on line 2, “**MENU, 2**”.) In each case, pressing **FUNC** and then a letter – **T, E, B, C, P, H** or **M**, creates the special effect. Then, various letters or numbers are entered. Finally, the same **FUNC** – plus letter combination is pressed, to “close” the expression. When **FUNC** and then **T, E, B, C, P, H** or **M** are used in the **EDIT** feature, a lower case version of the character appears in the message; otherwise all letters are capitals. Figure 4 shows how a buffer with a date codes count codes and pallet code might appear in the display.

Keyboard and Display

```
tAB/CD/Eft  
c00c p00p
```

Figure 4.
Count and pallet coding

```
h#7h Building (line 1)  
h#7h 24 (line 2)
```

Figure 5.
High Character
composition

```
#7 BUILDING  
24
```

Figure 6. High characters
printing effect.

```
LINE1  
LINE2MEDIUM
```

Figure 7. Medium
Characters.

Effects

The “bold” effect causes double-width characters to be printed. The “count” effect causes any numbers or letters between two **FUNC + C**s to be incremented every time a box is printed. The “pallet” effect is like the count, except that it counts multiples, i.e., pallets. (The pallet size can be set with the menu pallet feature, described later.)

The “time” effect allows dates and times to be printed. The electronic clock should be set to the correct time (See Time Codes). The expiry effect (**FUNC + E**) provides additional time codes, including expiration dates and a shift character.

High Character Effect (only available on MicroJet II & MicroJet III)

Characters placed between two **FUNC + H** tokens will be printed in a double-high effect (see Figures); however, the text *must be entered on line 2: switch* to line 2 (**MENU, 2**), press the **EDIT** key and then use the **FUNC + H** tokens with the desired text.

Occasionally the high effect is used on line 1, to “line-up” and effect, as shown in the Figures. High characters on line 1 don’t print, but they do occupy space, which can help line-up the message for more complicated effects.

Medium Character Effect (only available on MicroJet II & MicroJet III)

Text within two **FUNC + M** tokens is printed in a 7 dot high format. This works like the high characters; the text *must be entered on line 2*.

Keyboard and Display

Other EDIT Keys

Some other keys have special effects when using the **EDIT** feature. The ← and → keys move through the message; pressing **FUNC + DELETE** erases the previous character. **FUNC + S** *switches* lines #1 and #2: if the other line is empty, the current line is copied to it; if this line is empty, then the other line is copied to it; and finally, if both lines have text in them, then the text is switched.

Exiting

Once the print message looks correct, press **ENTER**.

Keyboard and Display

Menu

The **MENU** command key allows adjustment of many additional MicroJet features. After pressing **MENU**, a list of features appears, with a number or letter for each feature (see Figure 10). Use the → or ← key to move through the features, and enter the number or letter of the desired feature to select it. It actually isn't necessary to go through the features; if the feature number or letter is known, simply using the **MENU** key followed by the number or letter will select the feature.

1,2:Select Line (only available on MicroJet II & MicroJet III)

MENU followed by 1 or 2 selects line 1 or 2 for edit or adjustment. Both lines always print.

1:Line 1 2:Line 2 3:Print direction
--

Figure 10.
First Menu Screen

Menu

```
time MMDDYYHHMMroll
022492150610000
```

Figure 11. Time Feature

Time Letter	Description
A	Causes the tens digit of the month to be printed.
B	Causes the units digit of the month to be printed.
C	Tens digit of the date of the month.
D	Ones digit of the date of the month.
E	Tens digit of the year.
F	Ones digit of the year.
G	Tens digit of the hour (24 hour system).
H	Ones digit of the hour.
I	Tens digit of the minute.
J	Ones digit of the minute.
K	Causes the number of the day of the week to be printed(1..7).
L	Hundreds digit of the Julian date.
M	Tens digit of the Julian date.
N	Ones digit of the Julian date.
O	Causes the first letter of the name of the month to be printed.
P	Second letter of the name of the month.
Q	Third letter of the name of the month.
R	Tens digit of week number
S	Ones digit of week number

Figure 12
FUNC + T Time code

```
AB/CD/EF current date
month/day/year
GH:IJ current time
hour:minutes
K week day
LMN Julian date
OPQ JAN, FEB, etc...
RS week number
```

Set Time

When the Set time feature is selected, the screen shows a display like that in Figure 11. The numbers are the current time as kept by the electronic clock. The “MMDDYYHHMMWroll” is a brief description of the required values: “MM” stands for Month, “DD” stands for Date, “YY” stands for Year, “HH” stands for Hour, the second “MM” stands for Minutes, the “W” stands for the day of the week, and “roll” stands for the rollover time in hours and minutes. Rollover is set to 0000 by default. For most customers their day ends at midnight and the default would be used. If the production day ends at any other time, this value will have to be changed to whatever their time of day starts. This will allow the time data and expiration data to show the correct date for printing.

NOTE: All time is kept in the military 24-hour form (hour’s range from 00 to 23); the weekday should be a number between 1 and 7.

To change the time, type in new numbers. The → and ← keys can be used to move left and right, so that selected parts of the time can be changed as desired. Pressing **ENTER** sets the time as specified.

Time Codes

The time is kept so that times can be printed, by placing letters between two **FUNC + T** or **FUNC + E** combinations when using the **EDIT** feature (see above). However, to use the feature correctly, it is necessary to ascertain which letters should go into the expressions (see Figure 12). Various versions of MicroJet software may contain different time quantities; however, all versions will always display a description of all available time codes when an **ENTER** is pressed alone in the time feature: that is, by going **MENU, T, ENTER**, the display shows some time codes and the letters that produce them; pressing **ENTER** again shows another screen with more time codes; and so forth until all the time codes have been displayed. Pressing any key other than **ENTER** stops the time code display. Included in this display are the characters used in expiry expressions to print expiration dates and the shift character.

Menu

(eAB/CD/EF GHle)
Expiry 1:0

Figure 13. Expirations feature

Expiration Code	Description
A	Causes the tens digit of expiration month #1 to be printed.
B	Causes the units digit of expiration month #1 to be printed.
C	Tens digit of expiration date #1.
D	Ones digit of expiration date #1.
E	Tens digit of expiration year #1.
F	Ones digit of expiration year #1.
G	Causes the first letter of the name of expiration month #1 to be printed.
H	Second letter.
I	Third letter.
J	Tens digit of expiration month #2.
K	Units digit of expiration month #2.
L	Tens digit of expiration date #2.
M	Ones digit of expiration date #2.
N	Tens digit of expiration year #2.
O	Ones digit of expiration year #2.
P	First letter of expiration month #2.
Q	Second letter.
R	Third letter.
S	Prints shift letter.

Figure 14. FUNC + E Expiration Codes

#1: ?:00:00
Letter/DEL/ENTER/←→

Figure 15.
First screen in shift feature.

#1:A 00:00
Time: 00:00

Figure 16
Additional Screen in shift feature

Expirations

The Expirations feature sets the two expiration intervals; a number can be entered or altered, much like the other MicroJet numeric features. Two intervals are supported; as shown in Figure 13, the prompt indicates the expiration characters which should be used between two **FUNC + E** characters to print the expiration time (the same information is available in the **Time Codes** screens described elsewhere). After the first expiration interval is entered, the MicroJet will allow the operator to set the second interval.

The number entered for an expiration interval is used to determine the expiration date that will be printed, by adding the interval in days to the current date.

AB/CD/EF	expiration 1 date	month/day/year
GHI	expiration 1	JAN, FEB, etc...
JK/LM/NO	expiration 2 date	month/day/year
PQR	expiration 2	JAN, FEB, etc...
S	shift code	

Shifts

The Shifts feature is another time quantity that can be set (set **Expirations**, above, on how to print the shift character). This is one of the more complicated MicroJet features, but the basic idea is simple: a letter and a time is entered, and the MicroJet will then print that letter as a shift character whenever the specified time occurs. Several such letter/time combinations can be entered, and the MicroJet will determine which is the appropriate letter to print at the current time.

Using the expiration tokens with the letter S like eSe to print the shift codes as entered in the Shift Menu. Four possible shift codes are available, which can be single alpha-numeric values. First the value is entered and then its starting time. If entered out of order the printer will sort them. For example, if there are two shift codes: A starting at 0600 and B starting at 1800. There are entered and used in their time coding expressions. Many customers require fixed codes, or other special variations. These are quoted and special software required.

Menu

Track c000c? (Y/):

Figure 17. Tracking option in count feature in Special Software.

As shown in Figure 14, first the desired shift letter should be entered. The screen then changes as shown in Figure 16, and the shift starting time in hours: minutes can be entered, followed by the **ENTER** key. This process is continued until all four shifts are entered, or the feature is left by pressing the **MENU** key.

Alternately, instead of entering a letter the → and ← keys can be used to “scroll” through the existing shift codes, in case only one has to be changed. When the feature has reached the end of all available shifts, it asks “Finished (Y/N)?” answering “N” goes back to the last shift record, to allow further alteration. It makes no difference what order shifts are entered; when the feature is finished, it sorts the shifts by time.

Count

The Count feature allows inspection and adjustment of the unit’s box count. This number counts print cycles, and is incremented whenever a print cycle occurs. It can be edited much like the current time.

Normally the box count is entirely *separate* from count expressions – incrementing expressions placed between two **FUNC + Cs** in a message. The Count feature’s second screen (Figure 17) allows this behavior to be modified: printed count **FUNC + C** expressions can *track* the current box count. Pressing any key other than **Y** in response to the Count feature’s track question will let counting expressions increment independently. Answering **Y** to the track question, however, will cause *all* count expressions in all messages stored in the machine to *copy* the current box count.

Note that tracking is defeated, however, if there is a pallet size specified (see below).

Change Message

Selects a message from storage. The CHANGE MESSAGE feature selects which message can be edited and/or be printed. The number displayed when the feature is selected is the number of the current message – the one that will be printed now. When this number is changed, either by pressing numbers keys or using the → and ← keys (that is, just like other numeric quantities, such as **DELAY** or **WIDTH**) the current print message disappears, but remains saved in memory, and is replaced by blanks or by a previously composed message. Using the CHANGE MESSAGE feature and selecting its number can always retrieve the original message.

Messages are saved in pre-existing message areas. First the message number must be selected and this blank area is then edited. Once this area has been edited and then switched to another saved area, which is then edited. Any changes are made in this save area automatically until another next message is selected.

Message Review

Within the CHANGE MESSAGE feature, the operator can view the various messages stored in memory. This is convenient if the number of a particular message is uncertain. Entering? (Or **D** for “Display”—the letter on the **?** key) in the CHANGE MESSAGE feature (that is, instead of a number or using the → or ← keys) brings up message review: the text of the current message is shown, and the number of the message is displayed in the lower right hand corner of the screen. Pressing the → and ← keys will “move” through the various messages, and show one after another. Pressing **ENTER** selects the current message shown, and returns to the normal CHANGE MESSAGE screen, where pressing **ENTER** again will select the message.

Valve 1 (top) to
Valve 16: 1

Figure 18.
Valve feature screen

Valve 1 (top): 0

Figure 19. Valve
adjustment
screen

Valve Adjustments

The VALVE ADJUSTMENTS feature allows adjustment of the individual printing dots; this can sometimes be used to create a more pleasing or even printing effect. Because valves may break in at different rates, valve adjustments may be required within the first month after installation. Individual valve adjustments may also be necessary after installing replacement valves.

When the feature is selected, the screen changes to the prompt shown in Figure 18; valve #1 is ready to be modified. As usual, the → and ← keys can be used to change the valve number, or a desired number can be entered. Pressing **ENTER** selects the specified valve, and produces another screen for that valve.

In the valve screen, the valve adjustment value for a single valve can be changed (with arrow keys or numbers). See Figure 19.

A larger number turns on the single specified valve for a longer time each time a dot is printed – it makes the dot *for that valve* “blacker”.

Pressing **ENTER** in the valve screen moves back to the valve feature screen, where the next valve is automatically presented, or any valve can be specified.

NOTE: Because valves may break in at different rates, valve adjustment may be required within the first month after installation. Individual valve adjustment may also be necessary after installing replacement valves.

Exiting Valve Adjustment

Unlike most other MicroJet features pressing **ENTER** will *not* exit the valve adjustment feature: the sequence **MENU** (or any other action key like **DELAY**, etc), followed by **ENTER** is necessary.

Note: MicroJet I has 5 valves, MicroJet I Plus has 7 valves, MicroJet II has 11 valves, MicroJet III has 16 valves.



Pallet size:

Figure 20. Pallet feature

Pallet

An easy to use palletizing system is provided. A “pallet” is generalized here to mean any shipping unit; it is desirable in many cases that two different counts be printed on a carton, one of which counts the items that go into a pallet, and the other which counts the filled pallets.

The PALLET feature brings up the pallet menu, as shown in Figure 20. The current pallet size will be shown, or the screen will show no pallet size if none has been entered. The desired pallet size should be entered; or all the characters can be deleted (with the **DELETE** key) if no pallet is desired. Pressing **ENTER** in either case exits the feature.

Whenever the MicroJet has just finished printing a message, it will execute the following steps regarding counting (“c01c”) and pallet (“p01p”) expressions:

- ◆ *IF* a pallet size is specified, counting expressions are compared to it. If a counting expression matches the pallet size, then the counting expression is set to 1, and if any pallet expressions are present, they are incremented.
- ◆ If no pallet size is specified, or no match is detected, counting expressions are incremented.

If the pallet size were set to “0004” and a print buffer like “clc p001p” were set up, then subsequent printing would follow the pattern 1 001, 2 001, 3 001, 4 001, 1 002 and so forth.¹

¹ Pallet counting is actually somewhat more sophisticated than this brief summary suggest. After a message is printed, the software checks the value of the counting expression (“c002c”) furthest *to the right* in the message and compares it with the pallet expression specified by the operator. If there is *no match*, then the counting expressions get incremented as usual. If the right most counting expression *matches* the operator’s specified maximum value, then all incrementing expressions in the buffer are set to 1 (alphabetic expressions are set to “cAAAc”) and any pallet expressions (“p003p”) are incremented. Thus the pallet expression slowly count the pallets, while the counting expressions more rapidly count the number of items within the current pallet.

No *arithmetic* comparison is made between counting expressions and the specified maximum. If the counting expression starts with a value *larger* than the specified maximum *it will not be reset*. Also, pallet comparison is conducted in a special way:

- *Pallet count comparison starts on the right*. The right most character in the right most counting expression is compared with the right most character in the specified pallet count. Then the next character to the left is compared, and so forth. If there is more than one counting expression in a palletized buffer, only the right most one is used for comparison.
- *Excess is discarded*. During the comparison, if the left side of either expression is reached without a mismatch, the software assumes a match has occurred. Thus a maximum of “11” will match a counting expression of “c0011c”, “c111c” and so forth. The reverse is also true: a maximum of “123” will match the counting expressions “c23c” and “c3c”/
- *Special characters are ignored*. Any effect tokens within the counting expression (bold for instance) are ignored for purposes of comparison.

Menu

1:ENGL	2:ITAL
3:DEUT	4:FRAN

Figure 21. Language menu

Select Language

The SELECT LANGUAGE feature determines the language in which MicroJet menus and other informative screens will be displayed. The feature works like the **MENU** feature itself: use the → and ← keys to move through the available languages, and then press the appropriate number of character for the desired language. Figure 21 shows the beginning of the language menu; pressing the arrow keys will “scroll” to show more of it.

Available languages are English, Italian, German, French, Spanish, Portuguese and Dutch. The languages are usually indicated on the menu with an abbreviation *in the original language* (i.e., “ESPA” for Spanish) to facilitate recognition by language speakers.

Other

The OTHER menu selection provides access to various little used and maintenance features of the printer; the contents of the menu may change from version to version of the software.

One OTHER selection is “Slash”: the MicroJet normally prints the zero character with a slash through it to distinguish it from the letter “O”. The SLASH feature optionally changes this behavior so that zeros are rendered without a slash and look like the letter “O”, during printing and on the MicroJet display.

The Character Space adjust the amount of hidden dots between the characters; whereas the Space Width adjust the space “ “ character itself.

FlushBack setting adds spaces automatically to align text. Therefore forward and backward printing will be the same.

Purge

Invert

The INVERT menu selection provides the customer the capability of printing upside down. This command and reversing the direction will boxes to be loaded in a bottom-inserted application.

Purge

“Purging” is the process of cleaning the print heads by running ink through them (a container should be arranged to catch run-off).

There are various ways to clean and purge a printhead, including the MicroJet’s **FUNC A + P** command. After UNLOCKing the unit, pressing **FUNC** button, **A** and then pressing the letter **P** will start the purge. Pressing **P** again to stop the purge.

Purging can also be done using the purge button inside the chassis.

FUNC A also provides a dampen selection for breaking in new valves for production **FUNC A + D**. **FUNC A + A** is a print trigger which prints all lines every time A is pressed. This is useful when you want to print with the photocells blocked.

666SLAM

To clear the MicroJet – erase all stored print messages and settings. Turn the unit off, press and hold the number **6**, turn the unit on. Wait about a second, release the **6**, then press **“666SLAM”**. If any error is made in typing the characters, the memory clear does not occur. The procedure should only be necessary when an unusual electrical disturbance has corrupted the unit’s memory.

Command “Jumping”

When various MicroJet features are being adjusted, pressing one of the command keys (**DELAY**, **WIDTH**, etc.) will usually “exit” the current feature and go immediately to the requested feature.

Maintenance

Maintenance

A few simple procedures will keep the MicroJet in perfect working order.

General Maintenance

To insure continuous trouble-free operation, these simple steps should be followed:

SHORT TERM Up to 2 days

Shutdown

No maintenance necessary.

Start up

Wipe the nozzle plate with a damp cloth. Turn the unit on and print. Purge if necessary.

LONG TERM Greater than 2 days

Shutdown

Before shutting the unit down for periods longer than 48 hours, wipe the nozzle plate with a wet cloth. Coat the nozzle with a small amount of petroleum jelly.

Start up

Wipe the nozzle plate to remove the petroleum jelly.

Purge and wipe the nozzle until all petroleum jelly is wiped away, and all nozzles are purging straight streams of ink. Repeat as necessary until all nozzles are purging.

DAILY

Wipe the photocell covers with a dampened cloth.

Greater than 3 weeks

For extended down times (longer than three weeks), the unit should be flushed with LOVESHAW's Valve Pre-Conditioning Fluid (see page 33 for part number). This fluid prevents ink from drying in the plastic tubes on the unit. When restarting the unit, be sure to flush out all conditioner with ink (ink should run pure black), before beginning to print.

General Maintenance

Changing a Valve

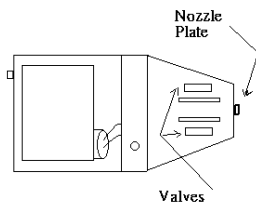


Figure 22. Valves

1. Turn the unit off. Stand ink container upright. Release the internal pressure in the container by opening the cap. Once the pressure is released, re-tighten the cap and reposition ink container.
2. Crimp the tubing from the manifold to the valve (refer to Figure 23) (See MicroJet Spare Parts Kits on page 33 for crimper). You are working with the off-center port on the front of the valve (Figure 24). Valve #1 is positioned next to the 3 pin electrical connector.
3. Gently slide the tubing off the inlet valve port. (If necessary, gently pry off with a small bladed screwdriver.) (See figure 24).
4. Gently slide the tubing off at the outlet valve port.
5. Remove the valve from the valve board by using a small pliers, grasping the valve at the shoulder and rocking the valve from side to side as upward force is applied. Take care not to hit the valve ports.
6. Install the new valve. Pay special attention to its location for necessary computer adjustment later.
7. Connect the tubing from the ink manifold to the off-center port on the new valve. Be sure to insert the tubing onto the valve port as far as possible and position it is so that there are no sharp bends.
8. Connect the tubing from the nozzle plate to the center port of the new valve. Be sure to insert the tubing onto the valve port as far as possible.
9. Position the tubing so that the feed line is not under the valve or crimped in any way.

Changing a Valve

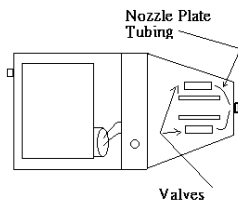


Figure 23. Removing a Valve.

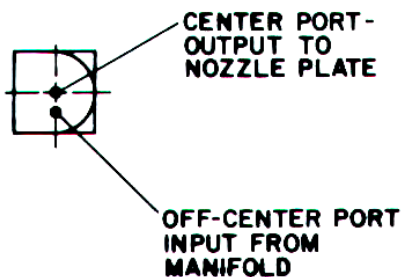


Figure 24. Valve ports

10. Release the crimp on the manifold tubing. Make sure the tubing has not been damaged. If questionable, replace it.
11. Double-check all connections.
12. Turn the unit on. Check all connections for leaks.
13. Complete a 10 to 15 second purge cycle to remove any air that may have entered the system. Hold the lid in a vertical position while purging to remove all air from the ink reservoir. The low ink should be out when the lid is closed; if not, repeat the purge.
14. If the purge is satisfactory, make a test print.
15. If OK, return to use.

Removing/Replacing the Valve Board

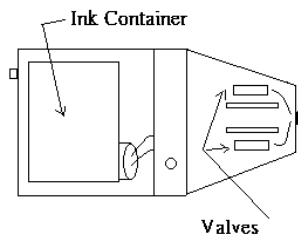


Figure 25. Removing Ink Container.

Removing the Valve Board

1. Crimp the ink feed tubing with crimpers just behind the brass connector (that part of the unit that has the connector pins which enter the ink container).
2. Turn the unit on.
3. Purge all pressure from the system by holding the purge switch down until ink no longer leaves the nozzle.
4. Turn unit OFF.
5. Disconnect the ink tubing at the ink manifold (single tubing input). (See Figure 25).
6. Remove the ribbon connectors. Remove the two screws and spacers holding the boards to the chassis.
7. Lift the valve board up and out of the unit.

Replacing Valve Board

Reverse the steps given above in removal procedure.

Ink Container Replacement

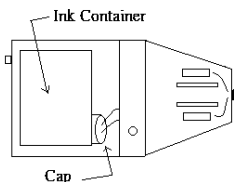


Figure 26.
Removing ink container

Ink Container Replacement

The self-contained ink supply must be changed when the low ink light comes on. Follow these steps:

1. Turn unit's on/off switch to the off position.
2. Position the container in an upright position (see Figure 26).
3. Hold the container with one hand while twisting the cap with the other. You will hear a small "whoosh" of air as the container decompresses.
4. Remove the cap and pull the connector out of the container. Remove the empty container from the unit.
5. Remove the cap from the new container of ink. Place it on the empty one and tighten down. Discard the empty container.
6. Place the full container in an upright position.
7. Position the connector in the top of the new ink container making sure both pins have entered their respective openings. (The large pin is in the air line and closest to the label). The openings are different sizes so care must be taken to get the proper orientation. Simply rotate the connector to get the right orientation.
8. With the container connector in position, push down on the connector causing the pins to penetrate the plastic membrane.
9. Reconnect the partial cap in the MicroJet to the ink container and tighten down.
10. Reposition the new container in the unit, 2/3 of the way in the chassis.
11. Complete a 60 second purge cycle to remove any air that may have entered the system.
12. When the light goes out insert the container all the way into the chassis.
13. The MicroJet is ready to print.

NOTE: "USE OF ANY INK NOT CONFORMING TO LOVESHAW'S SPECIFICATIONS WILL VOID THE UNIT WARRANTY." To order LOVESHAW ink for the MicroJet, call your Distributor, or LOVESHAW at 1-800-572-3434.

Fuse Change / Removing the CPU Controller

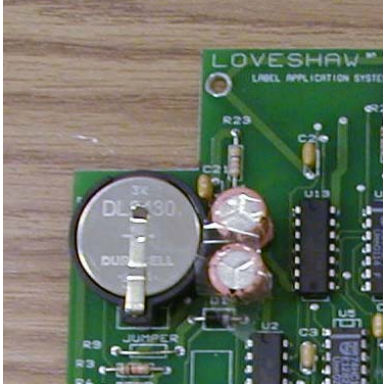
Fuse Change is easy to accomplish.

1. Turn unit's on/off switch to the OFF position.
2. Remove fuse from fuse holder.
3. Insert new 2-amp 250V replacement fuse located on Power Supply Board.
4. Turn unit on.
5. If fuse blows again, contact your Distributor.

Removing the CPU Controller

1. Turn unit off.
2. Remove two screws of black plastic cover and remove cover.
3. Disconnect piggy-back driver board.
4. Remove JP5 power connector.
5. Remove JP3 keypad connector.
6. Remove JP4 LCD connector.
7. Remove JP2 low ink connector.
8. Remove four screws from sub plate metal.
9. Replace CPU and reverse procedure.

Battery Replacement



3 Volt Lithium Battery
Part Number
CPMD75-009-0

Battery Replacement

The battery is on the CPU board in the lid compartment. First the plastic cover must be removed by unscrewing the two Phillip screws. Flip the piggyback board over. This will allow the CPU board to be viewed. The Battery is located in the lower right hand corner. Make sure the plus side is facing up.

Replaceable Battery Warning.

Replace 3V Lithium Battery with same type & size: DL2430

Never dispose of batteries in fire, as they could explode.

Do not attempt to recharge this battery.

Contact your local government for disposal or recycling practices in your area.

LITHIUM BATTERY WARNING

CAUTION! This product contains a lithium battery. There is danger of explosion if battery is incorrectly replaced. Replace only with a Duracell DL2430 or equivalent. Make sure the battery is installed with the correct polarity. Discard used batteries according to manufacturer's instructions.

ADVARSEL! Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt (Duracell DL2430) av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

ADVARSEL! Lithiumbatteri - Eksplosjonsfare ved feilagtig håndtering. Udsiftning må kun ske med batteri av samme fabrik(Duracell DL2430) at og type. Levér det brugte batteri tilbage til leverandøren.

VAROITUS! Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppin (Duracell DL2430). Hävitä käytetty paristovalmistajan ohjeiden mukaisesti.

WARNING! Explosionsfar vid felaktigt batteri byte. Använd samma batterityp eller en ekvivalent typ (Duracell DL2430) som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

ATTENTION! Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type (Duracell DL2430) ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Backflushing a Nozzle Plate

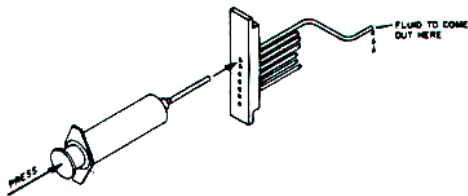


Figure 27. Backflushing

Backflushing a Nozzle Plate

This procedure can be performed while the unit is off.

1. Gently remove the tubing from the *center* port of the valve (see Figure 24).
2. Insert this tube into the flanged end of the backflushing tubing found in the spare parts kit. Place the other end in an open container outside the unit.
3. Fill syringe with 10ml of cleaner or warm water (see Optional Spare Parts on page 33).
4. Hold the syringe tubing over the nozzle which is not giving a straight purge stream while depressing the plunger of the syringe to force cleaner back through the nozzle; see Figure 26. (The fluid will be captured by the backflush container, which keeps the conditioner out of the electronics and prevents shorts.)
5. Disconnect the nozzle tubing from the backflush tube and drain the cleaner.
6. Turn the unit on. Press the purge switch for 3-4 seconds. Note the orifice just backflushed. If the stream is straight put into service; if not, repeat.
7. If the nozzle plate orifice is plugged and backflushing does not open it, contract your distributor for service instructions.

Spare Parts Kit

Spare Parts Kit

To order a MicroJet Spare Parts Kit, call your Distributor or LOVESHAW at 1-800-572-3434.

COMPLETE KIT

CPMA75-110-LT

Components

Part Numbers

1. One High Speed valve	CP00-086-0-LT
2. Two manifold Ts	CPMD75-073-0
Two manifold Ys	CPJ00-026-0
3. "O" rings:	
Ink pin on brass connector	CPM75-044-0
Air pin on brass connector	CPM75-045-0
4. Check Valve	CPM75-115-0
5. Tubing crimpers	CPM75-058-0
6. Fuse- 2 amp	CP40-027-0
7. Tubing	
6" manifold tubing	CP00-035-0
2' Manifold tubing	CP00-032-0
2' Nozzle plate tubing	CPJ00-024-0
8. Manifold filter	CPJ10-018-0

OPTIONAL SPARE PARTS

1. Power supply assembly		
2 amp		CPMA75-211
2. Valve board assembly		
5 or 7	1 board	LCA08-001
11 or 16	2 boards	LCA08-001
3. CPU assembly		
5	5 valves	CPMA11-010/5
7	7 valves	CPMA11-010/7
11	11 valves	CPMA11-010/11
3 lines	16 valves	CPMA11-010/16
High Char	16 valves	CPMA11-010/H16
Keypad assembly		CPM75-210-A
4. Transformer		
5, 7	115v 60Hz	CPM75-003-115
	240v 50Hz	CPM75-003-240
11, 16	115v 60Hz	CPM11-003-120
	240v 50Hz	CPM11-003-240

Spare Parts Kit

5. Nozzle plate assembly		
	5 (11/32")	CPMA55-201
	7 (3/8")	CPMA75-203
	7 (1/2")	CPMA75-204
	7 (7/8")	CPMA75-205
	11 (13/16")	CPMA11-201
	11 (2")	CPMA11-202
	16 3 lines	CPMA16-205
	16 High Char(15/16")	CPMA16-219
	16 High Char(1 1/4")	CPMA16-220
	16 High Char(2 7/32")	CPMA16-221
6. High Speed valve		CP00-086-0-LT
7. Manifold assembly		
	5	CPMA55-202
	7	CPMA75-218
	11	CPMA11-213
	16	CPMA16-206
8. Power backup & line conditioner		CPV40-003-0
9. MicroJet Operator Manual		CPM200-MJ-LT
10. Syringe assembly		CPJA0104
11. Drain Hose		CPM75-059-0
12. Valve Pre-conditioning fluid (6liter case)		CPMA75-640**
13. Cleaning fluid (6 liter case)		CPMA75-624**
14. Trouble shooting guide		CPM200-TSG-LT
15. Vertical Print Option Assembly		CPMA75-219
16. Black ink (6 liter case)		CPMA75-608**
17. Red ink (6 liter case)		CPMA75-620**
18. Green ink (6 liter case)		CPMA75-622**
19. Blue ink (6 liter case)		CPMA75-621**
20. Ultraviolet ink (6 liter case)		CPMA75-623**

****Part number is for 1 case. (6 – 1 liter bottles per case.)**

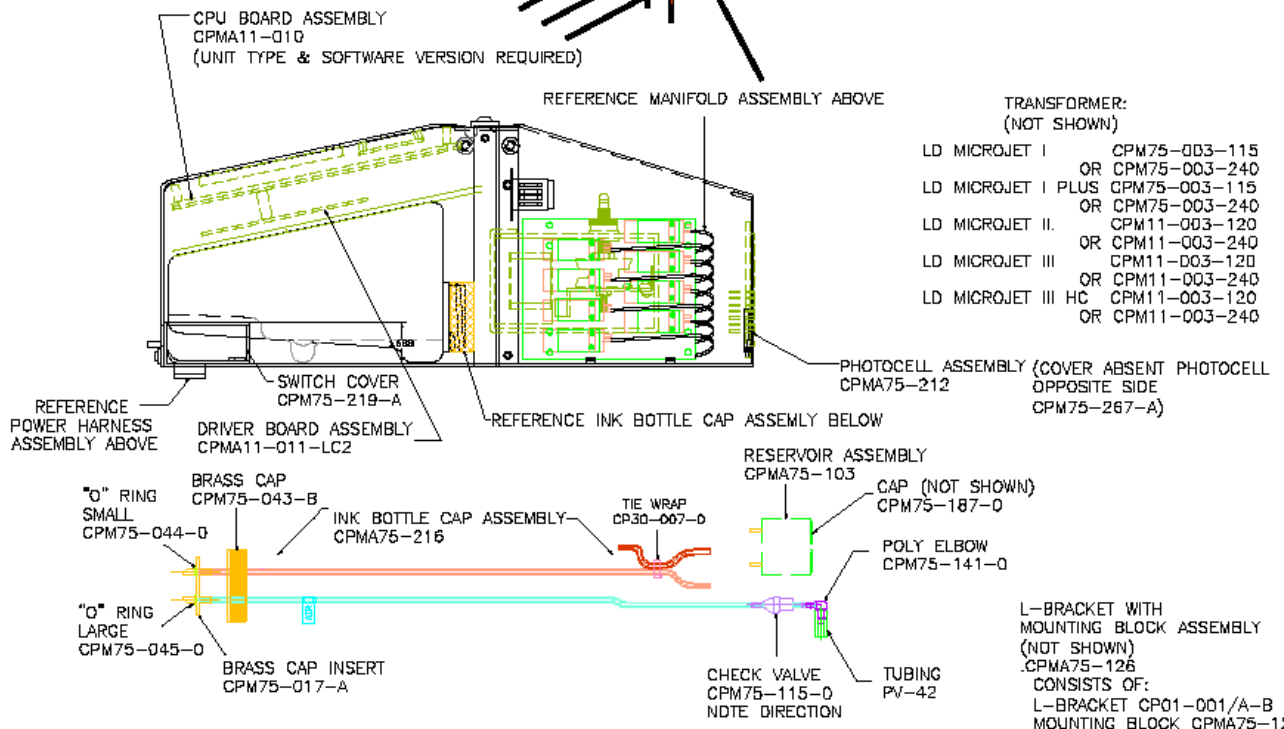
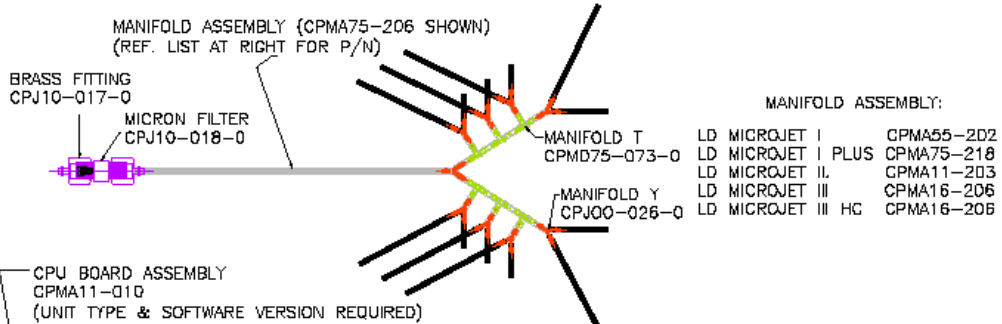
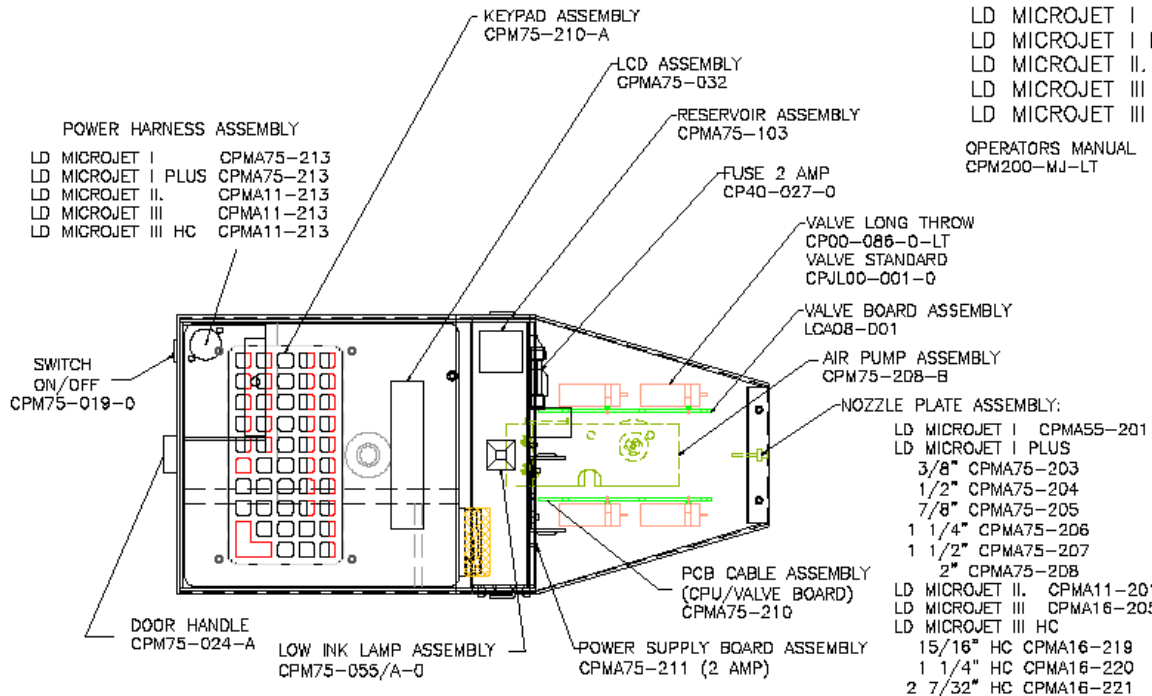
NOTE: "USE OF ANY INK NOT CONFORMING TO LOVESHAW'S SPECIFICATIONS WILL VOID THE UNIT WARRANTY."

LD MICROJET

QUICK REFERENCE PARTS LIST FOR:

- LD MICROJET I
- LD MICROJET I PLUS
- LD MICROJET II.
- LD MICROJET III
- LD MICROJET III HC

OPERATORS MANUAL
CPM200-MJ-LT



MicroJet I

- Prints one line of 5 X 5 dot matrix characters
- 11/32" (8.7mm) character height
- Self-contained non contact coding system
- High speed valves (5) standard
- Messages Save Area = 255 (39 fixed characters per line)

MicroJet I Plus

- Prints one line of 7 X 5 dot matrix characters
- Choose from one of following nozzle plate sizes:
 - 3/8" (9.5mm) - Prints one line of 3/8" character height or
 - 1/2" (12.7mm) - Prints one line of 1/2" character height or
 - 7/8" (22.2mm) - Prints one line of 7/8" character height
- Self-contained non contact coding system
- High speed valves (7) standard
- Messages Save Areas = 255 (39 fixed characters per line)

MicroJet II

- Prints multiple lines and character heights:
 - One or two lines of 5 X 5 dot matrix at 11/32" (8.7mm) character height or
 - One line of 7 X 5 dot matrix at 1/2" (12.7mm) character height or
 - One line of 11 X 7 dot matrix at 13/16" (20.6mm) character height or
 - any combination in a message
- Self-contained non contact coding system
- High speed valves (11) standard
- Messages Save Areas = 149 (39 fixed characters per line)

MicroJet III

- Prints multiple lines and character heights:
 - One, two or three lines of 5 X 5 dot matrix at 11/32" (8.7mm) character height or
 - One line of 7 X 5 dot matrix at 1/2" (12.7mm) character or
 - One line of 11 X 7 dot matrix at 13/16" (20.6mm) character height or
 - any combination in a message
- Self-contained non contact coding system
- High speed valves (16) standard
- Messages Save Areas = 100 (39 fixed characters per line)

MicroJet III HC

- Prints multiple lines and character heights
- Choose from one of following nozzle plate sizes:
 - 15/16" (23.8mm) - Prints one line of 15/16" character height and/or one or two lines of 7 X 5 dot matrix at 3/8" (9.5mm) character height
 - 1-1/4" (31.8mm) - Prints one line of 1-1/4" character height and/or one or two lines of 7 X 5 dot matrix at 1/2" (12.7mm) character height
 - 2-7/32" (56.4mm) - Prints one line of 2-7/32" character height one or two lines of 7 X 5 dot matrix at 7/8" (22.2mm) character height
- Self-contained non contact coding system
- High speed valves (16) standard
- Messages Save Areas = 149 (39 fixed characters per line)

Specifications

Power Requirements

115 \pm 10% volts AC 60Hz, 300 watts max. Other voltages: 240 VAC at 50 Hz is available.

Operating Speed

Prints at rates up to 200-ft/min (60.96m/s) depending on system set-up conditions.

Character Fonts

5x5 dot matrix for MicroJet I
7x5 dot matrix for MicroJet I Plus
5x5, 7x5 and 11x6 dot matrix for MicroJet II
three 5x5 or 11x6/5x5 dot matrix for MicroJet III
all available with bold print
7x5 and 16x8 for MicroJet III HC

Operational Variables

Product delay, character width, dot size, real time clock, message select, box count, time and date change, individual valve settings.

Character Set

Full ASCII 64 character upper case set. 39 character per message line standard.

Print Direction

Forward and/or reverse.

Memory

MicroJet I or I Plus up to 255 messages.
MicroJet II & III HC up to 149 messages.
MicroJet III 3 lines up to 100 messages.

Character Size (height)

Styles standard: (depending on unit)

- 5 11/32" (8.7 mm)
- 7 3/8 (9.5 mm); 1/2" (12.7mm); 7/8" (22.2 mm)
- 11 13/16" (21mm)
- 16 15/16" (23.8mm); 1 1/4" (31.8mm); 2 7/32" (56.4mm)

Ink System Capacity

1-liter disposable ink container.

Dimensions

13" L x 6"W x 5"H

Hints for Optimum Performance

Hints for Optimum Performance

- To adjust any MicroJet feature, including the print message, the “unlock” code **must** be entered (**5863434**). Once entered, the locked message will be cleared from the display.
- Familiarize yourself with the alpha and number character keys and the symbols (available with the **UPPER KEY** key) as well as the capabilities of the control and command keys.
- It is not possible to estimate exactly how long a bottle of ink will last because of the many variables – length of messages, double dotting and size of characters – but please note that the MicroJet has a low ink signal. When the light comes on, it is time to replenish the ink supply. Refer to page 28.
- It is recommended that the Box Guide should come in contact with cartons for best print quality.
- Routine daily maintenance is recommended for optimum performance. See page 24.
- If there is too much or too little ink in your codes, adjust the **SIZE** or valve adjustments.
- If the code is unclear, purge until all nozzles give straight streams of ink. Backflush if necessary. See page 31 for instructions.
- If the code has uneven dot sizes after a valve change, balance the new valve with the older ones. It's a simple operation. See page 18.
- Regularly wipe the photocell covers with a dampened cloth.

Hints for Optimum Performance

- To clear the MicroJet of all stored messages and print settings, turn the unit off, press and hold the number **6**. Turn the unit on, wait about a second, release the **6**, and then type **6 6 S L A M** normally. If any error is made in typing the characters, the memory clear does not occur.
– WARNING- This procedure will permanently delete all messages stored in memory.
- If the Internal compartment should flood with ink, disconnect the power cord immediately and remove the ink container. Rinse the ink from the ink compartment and dry thoroughly before returning unit to operation.
- Retain the shipping cap from the ink container. It can be used to reseal the container should the unit need servicing and the ink container removed.
- If the unit must be returned to LOVESHAW for servicing, **do not return it with the ink container still in the unit**. This will cause flooding and further complicate the repair. **REMOVE THE INK BOTTLE BEFORE SHIPPING.**

NOTE: "USE OF ANY INK NOT CONFORMING TO LOVESHAW'S SPECIFICATIONS WILL VOID THE UNIT WARRANTY."

Warranty

Little David® Warranty

For:

**MicroJet I, MicroJet I Plus, MicroJet II, MicroJet III and MicroJet III HC
Ink-Jet printers.**

2 YEAR WARRANTY ON VALVES

1 YEAR WARRANTY ON ALL OTHER PARTS

*LIMITED WARRANTY – **LOVESHAW**, an **ITW** COMPANY (HEREIN AFTER “**LOVESHAW**”)

**WARRANTS ONLY THAT THE GOODS SOLD BY IT SHALL BE FREE FROM
DEFECTS IN MATERIAL AND WORKMANSHIP, UNDER PROPER AND
NORMAL USE AND MAINTENANCE,**

AS FOLLOWS:

<u>VALVES -</u>	2 YEARS from date of delivery.
<u>ALL OTHER PARTS -</u>	1 YEAR from date of delivery.

THE WARRANTY PERIOD SHALL COMMENCE AS OF THE DATE OF DELIVERY TO THE PURCHASER. THE OBLIGATION OF LOVESHAW UNDER THIS WARRANTY IS STRICTLY LIMITED TO THE COST OF REPAIRING OR REPLACING, AS LOVESHAW MAY ELECT, ANY PART OR PARTS THAT PROVE IN LOVESHAW'S JUDGEMENT TO HAVE BEEN DEFECTIVE IN MATERIAL OR WORKMANSHIP AT THE TIME THE GOODS WERE SHIPPED FROM LOVESHAW'S PLANT. ANY WARRANTY CLAIM NOT MADE IN WRITING TO LOVESHAW AT ITS HOME OFFICE WITHIN THE APPLICABLE WARRANTY PERIOD AND WITHIN 10 DAYS OF FAILURE WILL NOT BE VALID. THIS IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE UNDER THIS WARRANTY. UNDER NO CIRCUMSTANCES WILL LOVESHAW BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

IF REQUESTED BY LOVESHAW, PURCHASER SHALL RETURN ANY DEFECTIVE PART OR PARTS TO LOVESHAW'S PLANT, FREIGHT PREPAID. ALL WARRANTY PART REPLACEMENTS AND REPAIRS MUST BE MADE BY LOVESHAW OR A LOVESHAW DEALER AUTHORIZED TO HANDLE THE GOODS COVERED BY THIS WARRANTY. ANY OUTSIDE WORK OR ALTERATIONS DONE WITHOUT LOVESHAW'S PRIOR WRITTEN APPROVAL WILL RENDER THIS WARRANTY VOID. **LOVESHAW**, an **ITW** COMPANY WILL NOT ASSUME ANY EXPENSE OR LIABILITY FOR ANY REPAIRS MADE TO ITS GOODS OUTSIDE ITS WORKS WITHOUT ITS PRIOR WRITTEN CONSENT. THIS WARRANTY SHALL NOT APPLY TO ANY ITEM THAT HAS NOT BEEN USED, OPERATED, AND MAINTAINED IN ACCORDANCE WITH LOVESHAW'S RECOMMENDED PROCEDURES. LOVESHAW SHALL HAVE NO LIABILITY WHATSOEVER WHERE THE GOODS HAVE BEEN ALTERED, MISUSED, ABUSED OR INVOLVED IN AN ACCIDENT.

NO PERSON IS AUTHORIZED TO MAKE ANY WARRANTY OR TO CREATE ANY LIABILITY BINDING UPON LOVESHAW, WHICH IS NOT STATED IN THIS WARRANTY. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, WHICH ARE HEREBY EXCLUDED. IN PARTICULAR, THE IMPLIED WARRANTY OF MERCHANTABILITY, AS WELL AS THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED.

Purchaser shall, before purchasing, determine the fitness and suitability of the said product LOVESHAW Ink Jet Printer for its intended purpose and neither manufacturer nor seller shall be liable for any loss or damage, direct or consequential, arising out of the use of or the inability to use the above described equipment.

**"USE OF ANY INK NOT CONFORMING TO LOVESHAW'S SPECIFICATIONS WILL VOID
THE UNIT WARRANTY."**

LOVESHAW an **ITW** Company

2206 Easton Turnpike, PO. Box 83 SOUTH CANAAN, PA 18459
570.937.4921 - 800.572.3434 - FAX 570.937.3229

Insertion Sheets

IMPORTANT

Carefully remove the tubing loop before connecting the Ink Bottle.
Pre-Conditioner Solution

This product is filled with Pre-conditioner solution that contains
ETHYLENE GLYCOL.

Danger! Harmful - Avoid contact with eyes, skin, or clothing.

Reference: MSDS for Pre-conditioner solution.

IMPORTANTE

Retire cuidadosamente el bucle de tubo antes de conectar el frasco de tinta

SOLUCIÓN DE PREACONDICIONADOR

Este producto ha sido llenado con una solución preacondicionadora que
contiene GLICOL ETILENO.

¡PELIGRO! Es perjudicial- Evite el contacto con los ojos, la piel o la ropa.

Referencia: Hoja de datos de seguridad del material (MSDS) para la solución
preacondicionadora.

Ink Container Installation

1. Stand ink container in unit with angled side facing the on/off switch and flat side is facing valves.
2. Twist off plastic shipping cap and discard.
3. Position brass connector over container, line up pin sizes so that large pin (air) enters large hole closest to label (air).
4. Press into place and screw cap onto container until tight. (Brass connector must remain flat while torque is applied).
5. Turn unit on; wait 10 seconds.
6. Check for proper fit. (Invert container while checking.)
7. Lay container in position so that angled side with label is facing up.
8. Position excess tubing to lay freely over valves.
9. Purge unit to remove all air from ink reservoir. Steady streams of ink should result once air is out of system.
10. Close lid. Ink lamp should be off. If not, repeat #9.

LOVESHAW CPM75-087-0

INSTALACIÓN DEL FRASCO DE TINTA

1. Coloque el frasco de tinta en la unidad de tal manera que el ángulo inclinado quede frente al interruptor de encendido y el lado plano se apoye completamente en la división del compartimiento.
2. Desenrosque la tapa y deseche el disco de goma que cubre las aberturas del frasco.
3. Coloque el conector de bronce sobre el frasco, alinee los tamaños de las clavijas de tal manera que la clavija grande (aire) encaje en el agujero grande más cercano a la etiqueta (aire).
4. Presione hasta encajar el frasco en posición y enrosque firmemente la tapa. (El conector de bronce debe permanecer plano mientras se aplica la fuerza de apriete).
5. Encienda la unidad; espere 10 segundos.
6. Verifique la correcta instalación (invierta el frasco al verificar).
7. Coloque el frasco en posición de tal manera que el lado inclinado quede hacia arriba (con la etiqueta de frente a usted) y que el cuello del frasco pase a través de la división del compartimiento.
8. Acomode el exceso de tubo frente a la tapa del frasco y no sobre la división del compartimiento donde podría resultar aplastado.
9. Purgue la unidad para eliminar completamente el aire del depósito de la tinta. Al extraer todo el aire del sistema deberá obtenerse un chorro uniforme de tinta.
10. Cierre la tapa. El indicador de tinta se apagará. De lo contrario, repita el paso #9.

LOVESHAW

CONTROL KEYS

EDIT - to enter new or edit existing messages
SPACE - insert spaces
DEL - removes characters and spaces
→ - moves cursor; increases value for width, delay, size
← - moves cursor; decreases value for width, delay, size
DELAY - delay start of print
SIZE - adjusts dot size on all valves simultaneously
WIDTH - adjusts width of characters

COMMAND KEYS

MENU+1. Line 1	MENU+2. Line 2	MENU+3. Line 3
MENU+4. Print Direction	- print direction	
MENU+5. Box Count	- box count	
MENU+6. Change Message	- message storage area	
MENU+7. Set Time	- set internal clock	
MENU+8. Valve Adjustments	- individual valve adjustment	
MENU+9. Expirations	- expiration dates	
MENU+A. Shifts	- shifts	
MENU+B. Pallet	- pallet	
MENU+C. Select Language	- set visual menus to Local Language	
MENU+D. Other	1. Slash - select between zero of 0 or Ø	
	2. Character Space - adjust space between the characters	
	3. Space Width - adjust the size of the space character	
MENU+E. Invert	- changes print for upside down	

FUNCTION KEYS

FUNC+A - purge option	FUNC+S - message switch
FUNC+B - bold printing	FUNC+T - time codes
FUNC+C - incrementing count	FUNC+E - expiration codes
FUNC+M - medium characters	FUNC+H - high characters
FUNC+P - pallet count	FUNC+I - inserts spaces

TIME CODES

FUNC+T	FUNC+E
AB/CD/EF- current month; date; year	AB/CD/EF - 1st expiration date
GH:IJ - hour; minutes	GHI - 1st expiration month - JAN
K - day of week	JK/LM/NO - 2nd expiration date
LMN - Julian date	PQR - 2nd expiration month - JAN
OPQ - month - JAN	S - shift character
RS - week	

REFER TO MANUAL FOR ADDITIONAL INFORMATION.

TECLAS DE CONTROL

EDIT	Para introducir mensaje nuevos o corregir los existentes
SPACE	Introduce espacios
DEL	Suprime caracteres y espacios
→	Desplaza el cursor; aumenta el valor para la anchura, el retardo o el tamaño
←	Desplaza el cursor; disminuye el valor para la anchura, el retardo o el tamaño
DELAY	Retarda el inicio de la impresión
SIZE	Ajusta el tamaño del punto simultáneamente en todas las válvulas
WIDTH	Ajusta la anchura de los caracteres

TECLAS DE COMANDO

MENU+1	Línea 1	MENU+2	Línea 2	MENU+3	Línea 3
MENU+4	Dirección de impresión				
MENU+5	Conteo de cajas				
MENU+6	Área de almacenamiento de mensajes				
MENU+7	Ajusta el reloj interno				
MENU+8	Ajuste individual de válvula				
MENU+9	Fechas de vencimiento				
MENU+A	Turnos				
MENU+B	Paletas de carga				
MENU+C	Select idioma				
MENU+D	Otros				
MENU+E	Invert				

TECLAS DE FUNCIÓN

FUNC+A	Purge	FUNC+S	Switch de mensajes
FUNC+B	Impresión en negrita	FUNC+T	Códigos de tiempo
FUNC+C	Aumentar el conteo	FUNC+E	Códigos de vencimiento
FUNC+M	Caracteres medianos	FUNC+H	Caracteres altos
FUNC+P	Conteo de paletas de carga	FUNC+I	Introduce espacios

CÓDIGOS DE TIEMPO

AB/CD/EF	Mes/fecha/año actuales
GH:IJ	Horas: minutos
K	Día da la semana
LMN	Fecha Juliana
OPQ	Mes
RS	Semana

CÓDIGOS DE VENCIMIENTO

AB/CD/EF	Primera fecha de vencimiento
GHI	Primer mes de vencimiento
JK/LM/NO	Segunda fecha de vencimiento
PQR	Segundo mes de vencimiento
S	Comando para cambio de turno

CONSULTE EL MANUAL PARA OBTENER INFORMACIÓN ADICIONAL

TECLAS DE COMANDO

- MSG** - Para programar mensagem ou revisar existente
SPACE - Inserir espaço na mensagem
INCR - Movimentar o cursor; aumentar os valores do atraso, largura e tamanho do ponto
DECR - Movimentar o cursor; adiminuir os valores do atraso, largura e tamanho do ponto
DELAY - Ajuste do atraso da fotocélula
SIZE - Ajuste genal do tamanho dos pontos de impressão
WIDTH - Ajuste da largura do caracter

MENU

- | | | |
|-----------------------|--|------------|
| 1. Linha 1 | 2. Linha 2 | 3. Linha 3 |
| 4. Direcao de impres. | - Direção da Impressão | |
| 5. Contador caixas | - Ajuste da contagem sequencial das caixas | |
| 6. Troca de Menssagem | - Memória das mensagens programadas | |
| 7. Ajuste Hora/Data | - Ajuste do relógio | |
| 8. Ajuste Válvulas | - Ajuste individual das válvulas | |
| 9. Validades | - Ajuste do prazo de validade | |
| A. Turnos | - Programação do turno | |
| B. Palete | | |
| C. Selec. Idioma | | |
| D. Outros | 1. Barra | |
| | 2. Espaço carater - Ajuste do espaço entre os caracteres | |
| | 3. Espaço Espaço - Ajuste do espaço em branco | |
| E. Invert | | |

TECLAS DE FUNCAO

- FUNC+A** - Purge
FUNC+B - Impressão em negrito
FUNC+C - Contagem sequencial
FUNC+T - Codificação de tempo
FUNC+E - Codificação de Validade
FUNC+P - Palete
FUNC+S - Mensagens
FUNC+I - Inserção de espaço na programação

CODIGO DE TEMPO

- | | | | |
|-----------------|------------------|-----------------|------------------------------|
| FUNC+T | | FUNC+E | |
| AB/CD/EF | - Mês/dia/ano | AB/CD/EF | - Validade Mês/dia/ano |
| GH:IJ | - Hora: minuto | GHI | - Validade 1: Mês - JAN, FEV |
| K | - Dia da semana | JK/LM/NO | - Validade 2: Mês/dia/ano |
| LMN | - Data juliana | PQR | - Validade 2: Mês - JAN, FEV |
| OPQ | - Mês - JAN, FEV | S | - Turno |
| RS | - Semana | | |

Para informação adicional consultar o manual.