

Technician's Manual

MicroJet™ Trouble-Shooting Guide



LOVESHAW
an *ITW* Company

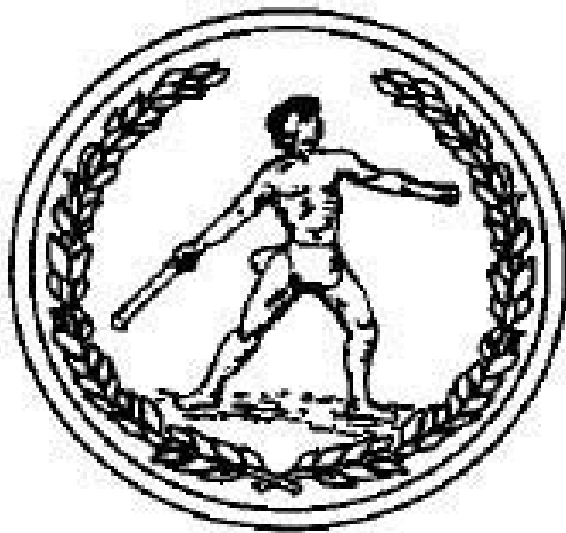
PART NUMBER: CPM755116-TSG

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MicroJet™

Trouble-Shooting

Guide



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Introduction

This document covers hardware procedures for the Loveshaw MicroJet Printers which include MicroJet II, MicroJet 5x5, MicroJet Multi II, and MicroJet Multi III. Procedures are described in a simple list form keyed to hardware fault, so that technicians can quickly diagnose and fix such problems.

NOTE: Refer to attached assembly drawings when trouble-shooting system. Further assistance can be obtained by calling your local distributor or Loveshaw factory service technician at 1-800-962-2633.

A) Ink lamp stays on

- * New units shipped from the factory contain a solution that will cause the lamp to remain on. This solution must be completely purged out, and ink purged through, before the lamp will go out.
- * Purge unit with lid at approximately 45 degrees, light should go out.
- * If lamp remains on, remove pump cover (Item #21). Page 28.
- * With power disconnected, look for broken wire at reservoir (Item #22) page 28 and test resistance across pins 1 and 2 on side "A" of four pin connector. Resistance across reservoir pins should measure approx. 1.5 meg. ohm (Item #2). Page 29. And figure 6, page 18.
- * If lamp remains on, call for service.

B) Ink lamp does not come on when ink container is empty

- * Remove pump cover (Item #21). Page 28.
- * With power disconnected, check continuity across reservoir pins 1 and 2 on four pin connector side "A" (Item #2) page 29. See figure 4 on electrical testing diagram page 18. Circuit should be open.
- * Check resistance of lamp between pins 3 and 4 on four pin connector on side "A". Resistance should be 25 ohms. If circuit is open replace lamp (Item #12) Page 28. See LOW INK LAMP/RESERVOIR LEAD REMOVAL procedure. Page 10.
- * Check voltage between pins 1 and 2 on four pin connector on side "B". A very small voltage of .075 volts DC should be present. If no voltage is present, replace CPU assembly (Item #7) Page 28
- * Check voltage between pins 3 and 4 on four pin connector on side "B". Voltage should be 25 volts DC. If no voltage is present, replace CPU assembly (Item #7) Page 28.
- * If lamp remains out, call for service.

C) Unit does not purge

- * Test pump pressure (Item #11). Page 28. Pressure should be between 2.0 and 3.0 psi. If pressure is zero, proceed to step "M".
- * Check ink level in container and replace if empty.
- * Check for kinks in tubing and replace, if necessary.
- * Test for ink flow from brass cap/ink container: Crimp tubing going into reservoir from ink container Pg. 15, Pg. 26 (Item 15) Remove tubing from inlet of reservoir and test for ink flow by loosening crimp (discharge into container and avoid getting ink on circuit cards). If no flow is present, replace ink container and/or brass cap.

* Test for ink flow from reservoir. Crimp tubing going into reservoir from ink container. Remove tubing from inlet side of filter. Pg. 15, 29 Item 23. Carefully loosen crimp and test for ink flow (discharge into container and avoid getting ink on circuit cards). If a weak ink flow or no flow is present, replace reservoir. See LOW INK LAMP/RESERVOIR LEAD REMOVAL procedure. Page 10.

* Test for ink flow from filter: Crimp tubing going into reservoir from ink container. Remove tubing from inlet side or off-center port of valve, item #3a, page 29. Carefully loosen crimp and test for flow (discharge into container and avoid getting ink on circuit cards). If a weak flow or no flow is present replace filter.

D) Heavy printing

* Check dot size setting (<SIZE> key). Lower if needed.

* Check incoming voltage from transformer. Voltage between pins 1 and 2 on transformer connector should be approximately 20 volts AC (see figure 5 on electrical testing diagram page 13).

* Purge to remove air.

* Check individual valve adjustment (<MENU> then 6). Lower if needed.

* Test pump pressure (2.0-3.0 psi) if higher, adjust. See AIR PUMP PRESSURE ADJUSTMENT procedure. Page 10.

E) Weak print/output

* Check dot size; increase as needed.

* Check purge output; all nozzles to give a 2" stream or greater.

* If weak printing continues, go to letter "C" testing.

F) Printing starts heavy and weakens when printing long messages

- * Purge for air removal.
- * Check purge-should be steady; if not, go to letter "C" testing.

G) Photocell LED(s) does not light

- * Test photocell by placing a white piece of paper directly in front of unit; LED(s) should come on. If not, turn photocell holder(s) gently from side to side and note if LED light(s) come on; leave in position that lights LED(s); slowly pull paper back from unit and note distance at which LED goes out; should be 2" or more. If not, replace photocell (Item #16) page 29.

H) Photocell LED(s) does not turn off

- * Check that there is no reflective material in front of unit. If so, the material should be painted a "flat black" color (infrared does not reflect well off of a flat black surface.)
- * Check for dirt or ink on the photocell lens. Clean with Q Tip and alcohol. If lens has a haze on it, replace photocell (Item #16) page 29.
- * Turn photocell holder(s) gently from side to side and note if LED light goes out.
- * Power the unit off then on; LED light should be off, if not, look for ink or water on board(s) or unit.
- * If ink or water is on board-remove and flush/dry overnight. Re-test next day.
- * LED light is on, and will not go out, replace CPU board (Item #7) Page 28.

I) Display does not come up

- * Check if pump is running; if not, check that transformer is operating properly (figure 3 on electrical testing diagram page 13).
- * If pump is running, check AC fuse under pump cover (Item #4 page 28) and replace if blown.
- * If fuse continues to blow, replace power supply board (Item #3 page 28).
- * If fuse does not blow, test voltage at valve board, insure 20-pin ribbon connector is seated properly. If proper voltage is present replace CPU.
- * If proper voltage is not present, call for service.

J) CPU losing date/time when unit is off

- * Reset and monitor for 24 hours with unit off.
- * If retest fails, CPU battery must be replaced.
 - CPU with round/coiled cable, See Fg. 19, Page 21 for Battery placement.
 - CPU with ribbon cable, See Fg. 20, Page 25 for Battery placement.
 - See Page 12 for replacement instructions.
- * If CPU loses date/time with unit on, replace CPU.

K) Valve does not print but purges

- * Plug a working valve in that position and test. If printing occurs, replace valve. If no printing occurs, replace CPU (Item #7). Page 28.

L) Valves print but will not purge

- * Test continuity of purge switch (on valve board) with unit off and purge switch depressed. Replace if defective; should be zero ohms.
- * Test valve board resistor/diode for proper values (figure 7 on electrical testing diagram, page 13).

M) Pump does not run

- * Remove transformer power cord from unit and check for proper voltage at connector (figure 5 on electrical testing diagram page 13). Replace transformer if defective.
- * Remove pump cover (Item #21, page 28) and check electrical connectors on pump (figure 3a on electrical testing diagram page 13). If proper voltage is present at pump and pump is not running, remove wires (2) going to pump, and check resistance across pump coil (figure 3b on electrical testing diagram page 13).
- * If no voltage is present at pump connectors call for service.

N) Ink leaks from ink bottle cap

- * Remove brass connector (Item #6 and 7, page 29) and check for presence of "O" rings on the under side of brass connector and replace if missing or damaged.
- * Tighten container cap.
- * Reposition container and check for leaks.
- * If leak continues, replace bottle with a new one and retest.
- * If leak continues, replace ink bottle cap assembly.
Part # CPMA75-104 (=Items # 5,6,7,27,28 Page # 29).

O) Product delay/character width changing on product

- * Check the orientation of box to Microjet — it must be perpendicular.
- * Clean photocell filters (Item #14, page 29) with water, and check that both photocell LED lights come on when product passes by. If photocell LED does not come on, go to procedure "G".
- * Check to insure no extraneous spaces are inserted before or after text in message. If so, delete extra spaces.
- * If problem continues, check for dark colored bands on box. (Photocells will not detect black). Test with a blank box.
- * If product delay/character width continues to move, call for service.

P) Ink not drying on product

- * Check dot size setting (<SIZE> key); lower if needed.
- * Check pump pressure-should be between 2.0 and 3.0 psi. If pump pressure is out of adjustment, see AIR PUMP PRES SURE ADJUSTMENT procedure.
- * Check to be sure box is not waxy or oily (make sure substrate surface has not changed).

Q) Nozzle plate weeps ink

- * Wipe nozzle plate with a damp paper towel and check to see if ink forms on nozzle plate.
- * If ink does not form on nozzle plate, print 5-10 boxes and check. If ink forms, replace nozzle plate tubing.
- * Remove valve at location generating weeping.
- * Connect valve to a 9 volt battery and flush water into outlet post with a syringe and a piece of .040 tubing.

- * Replace valve and retest.
- * Connect tubing to outlet of valve from the nozzle plate and purge
- * Repeat backflush and purge if necessary
- * If weeping persists, replace valve.

R) Nozzle blocked

- * Remove tubing from center port of valve that supplies fluid to blocked nozzle.
- * Connect drain hose (from maintenance kit) to tubing attached to back of nozzle plate (Item #10). Page 29.
- * Place other end of drain tubing outside of unit and drain into a container.
- * Place tubing end of syringe with cleaner, over orifice that is blocked and apply pressure (you will see fluid move down drain tube).
- * Continue flushing until tubing is clear of ink.
- * Disconnect syringe and reconnect tubing to valve port.
- * Purge and retest.
- * Repeat if necessary.
- * If nozzle is still blocked, replace the nozzle plate assembly.

S) Tubing loose on valve ports

- * If tubing is brittle, replace with new .050 X .070 tubing (p/n CPJ00-024-0).
- * If tubing is not hard, remove the valve (clamp off all pressure lines first) and cut off 1/8" from ends and reposition on valve.
- * Note: Both valve port and tubing end must be dry to ensure a tight fit. Dry tubing end by rolling the corner end of a paper towel into a fine point and insert into tubing end.

T) Unit locks up after installation

- * Connect transformer to a Power Backup Supply UPS (available from Loveshaw).
- * Supply a dedicated line plus use regulated supply.
- * Insure A.C. outlet has a proper ground.
- * Make sure the conveyor line is properly grounded to a low impedance ground (less then 5 ohms).
- * If you are unable to unlock the MicroJet by turning it on and off, preform the 666 SLAM function (see operators manual for additional information on 666 SLAM).

U) Tailing output

- * Check distance between head and substrate; should be 1/2" max.
- * Check dot size setting, readjust global and individual.
- * Make sure unit is level and not being subject to excessive vibration.
- * Purge system of air with lid at approximately 45 degrees.
- * Check pump pressure (see AIR PUMP PRESSURE ADJUSTMENT procedure, page 10).
- * Check tubing lengths going from valve to nozzle plate (see nozzle plate drawing).
- * Backflush all nozzles
- * Change nozzle plate (Item #10, page 29).
- * Increase character width and check line speed.

Low ink lamp/reservoir lead removal

To remove either low ink lamp leads or reservoir leads from the four pin connector, follow steps as listed:

- * Turn unit off.
- * Open lid.
- * Remove ink bottle; place cap on bottle and set aside
- * Remove two screws from pump cover, one on each edge, and set aside.
- * Disconnect four pin connector from modular board to

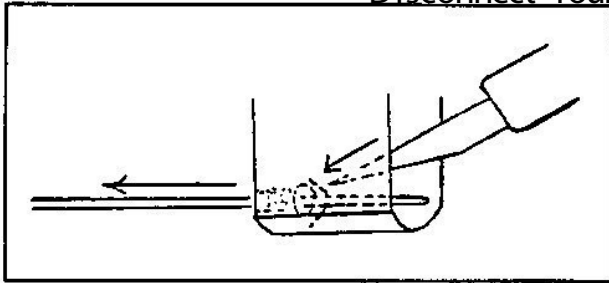


Figure 1. Pin extraction.

lamp/reservoir leads by pulling male and female of connector apart.

- * If a pin extraction tool is not available, use a fine point object (i.e., an X-acto™ knife), to push two locks of male pins inward towards pin body.
- * As locks of pin are being folded in, firmly tug wire away from connector.
- * Repeat for each pin removed.
- * Firmly tug wire away from connector.
- * Repeat for each pin removed.

Air pump pressure adjustment

- * Turn unit off.
- * Open lid.
- * Remove ink bottle; place cap on bottle and set aside.
- * Remove two screws from pump cover, one each edge, and set aside.

* Carefully flip cover upside down and lay on unit where instruction label is located. (Note that the reservoir will stay attached to underside of pump cover).

* Remove tubing from bellows shaft.

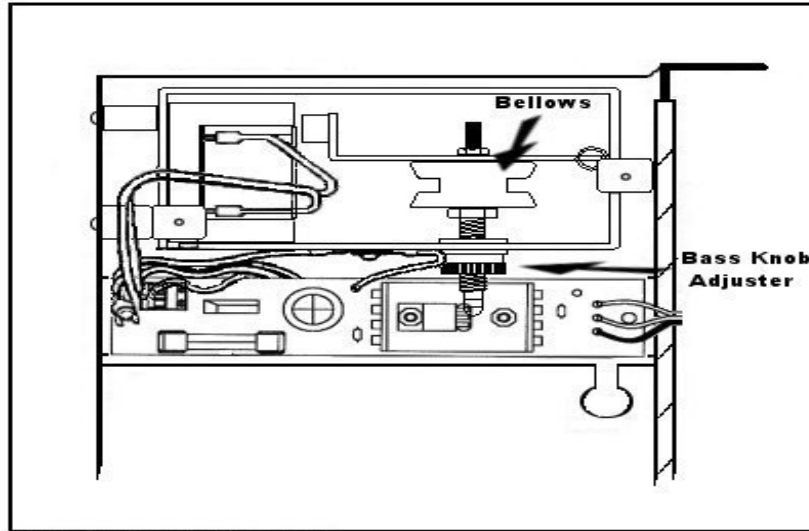


Figure 2. Pump pressure adjustment.

* Turn the brass knob clockwise for higher pressure or counter clockwise for lower pressure.

* Replace tubing onto bellows shaft.

* Place pump cover back into position and tighten the two screws.

* Verify pump pressure at air port of the brass bottle cap using gauge assembly and turn the unit on.

* Repeat procedure to obtain desired pump pressure.

Battery Replacement

- 1) Turn unit off.
- 2) Open lid and remove 4 screws from inside of top half of unit. Remove 2 jack screws that secure CPU board to CPU/KEYPAD assembly and position LCD keypad so that you have access to CPU board.
- 3) If battery is soldered into CPU board:
 - A) Remove old battery.
 - B) Note polarity of new battery and solder in place.If battery is in battery holder:
 - A) Remove old battery.
 - B) Note polarity of new battery and slide into holder.
- 4) Reassemble CPU/KEYPAD assembly and test unit.

Battery Replacement

Caution, Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

3 Volt Lithium Battery Part Number CPM D75-009-0 Part Number CPM 75-015-0

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. Utskiftning 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 tyyppiin (Duracell DL2430). Hävittä käytetty paristovalmistajan ohjeiden mukaisesti.

WARNING! Explosionsfar ved feilagtig batteribyte. Använd samma batterityp eller en ekvivalent typ (Duracell DL2430) som rekommenderas av apparat tillverkaren. 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.

TROUBLESHOOTING CHART

CHECKING AIR PUMP COIL ASSEMBLY CPM75-208-B

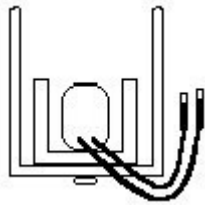


Figure 3a

SET METER TO V~ AND TAKE READING ON TWO TERMINAL CONNECT TO POWER. IT SHOULD BE 19.5 VAC. POWER SHOULD BE ON.

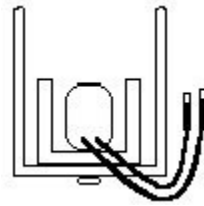


Figure 3b

SET METER TO OHMS AND TAKE READING ON DISCONNECTED TERMINALS WITH POWER OFF UNIT. IT SHOULD BE 32 OHMS.

LOW INK LIGHT CONNECTOR CHECK

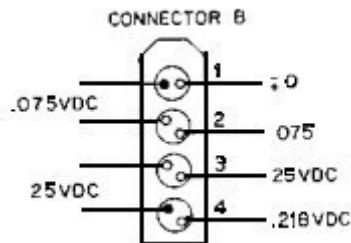


Figure 4

SET METER TO DC VOLTAGE.

NOTE :

TWO TOP WIRE ARE FROM RESERVOIR AND BOTTOM TWO ARE FROM THE LAMP. POWER MUST BE ON.

POWER SUPPLY TRANSFORMER CHECK

CPM11-003-120
CPM11-003-240

SET METER TO AC VOTAGE. MEASURE THE TRANSFORMER PLUGED INTO AN AC OUTLET.

CPM75-003-115
CPM75-003-240

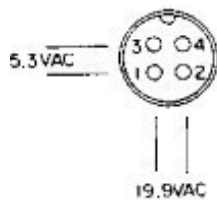


Figure 5a

PIN #1 RETURN
PIN #2 HOT (primary)
PIN #3 HOT (secondary)
PIN #4 NO CONNECTION

PIN #1 HOT (primary)
PIN #2 RETURN
PIN #3 HOT (secondary)

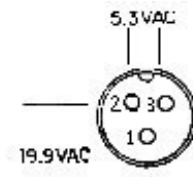


Figure 5b

LOW INK LIGHT CONNECTOR

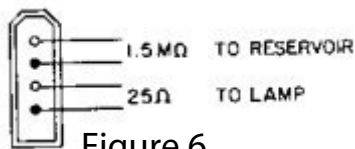


Figure 6

SET METER TO OHMS

DIODE
CPJ00-009-0 & RESISTOR
25 OHM

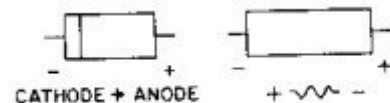


Figure 7

Figures 3A, 3B, 4, 5a, 5b, 6, 7. Assorted measurements.

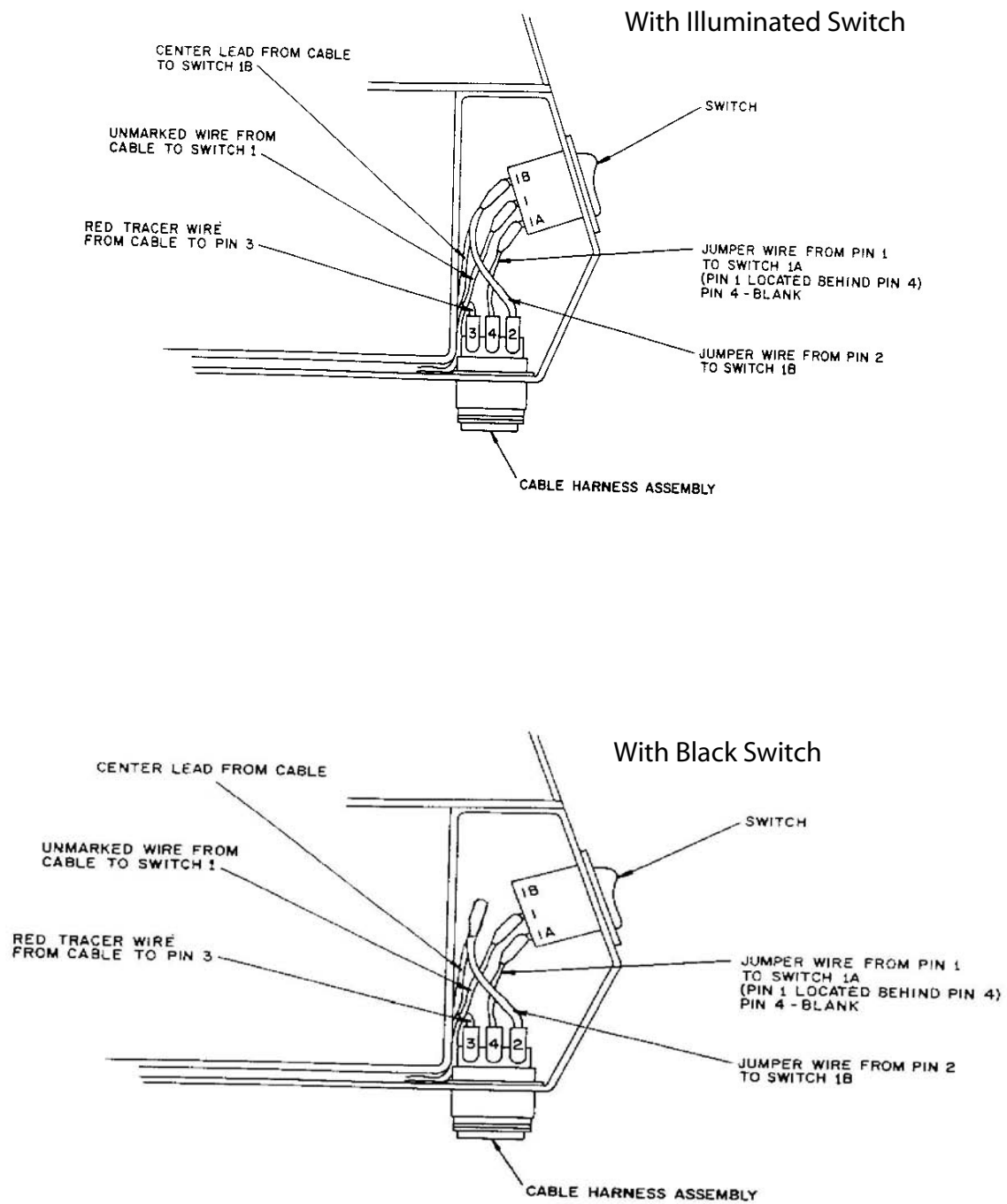


Figure 8. Power harness assembly.

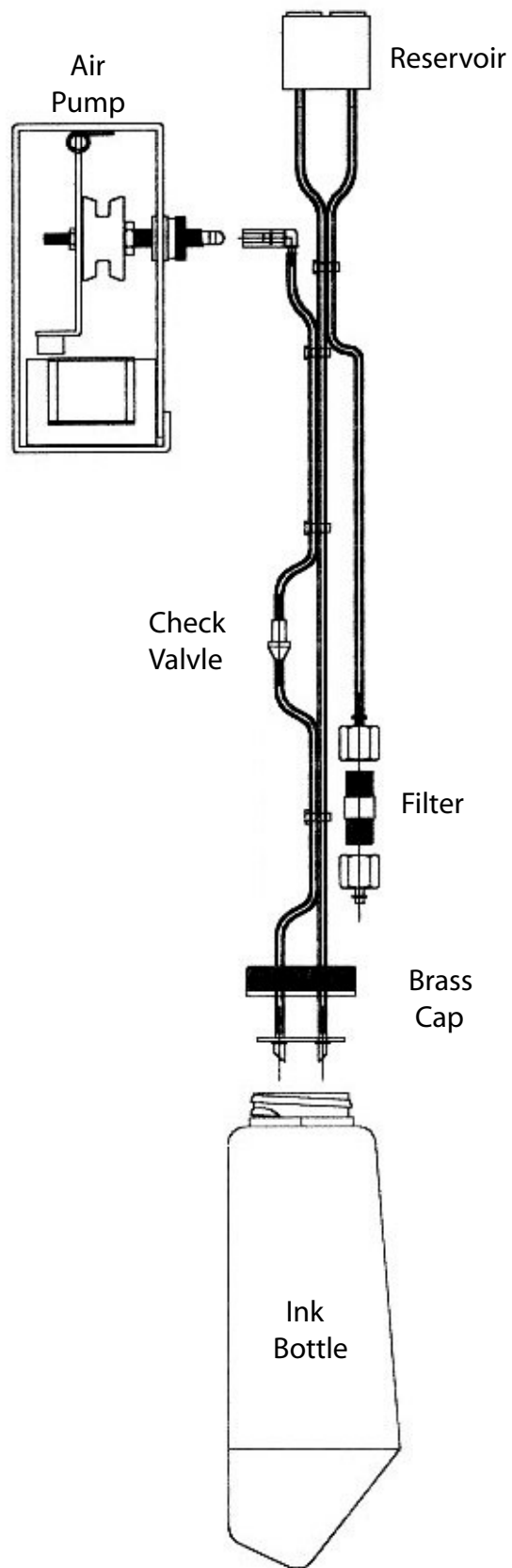


Figure9.

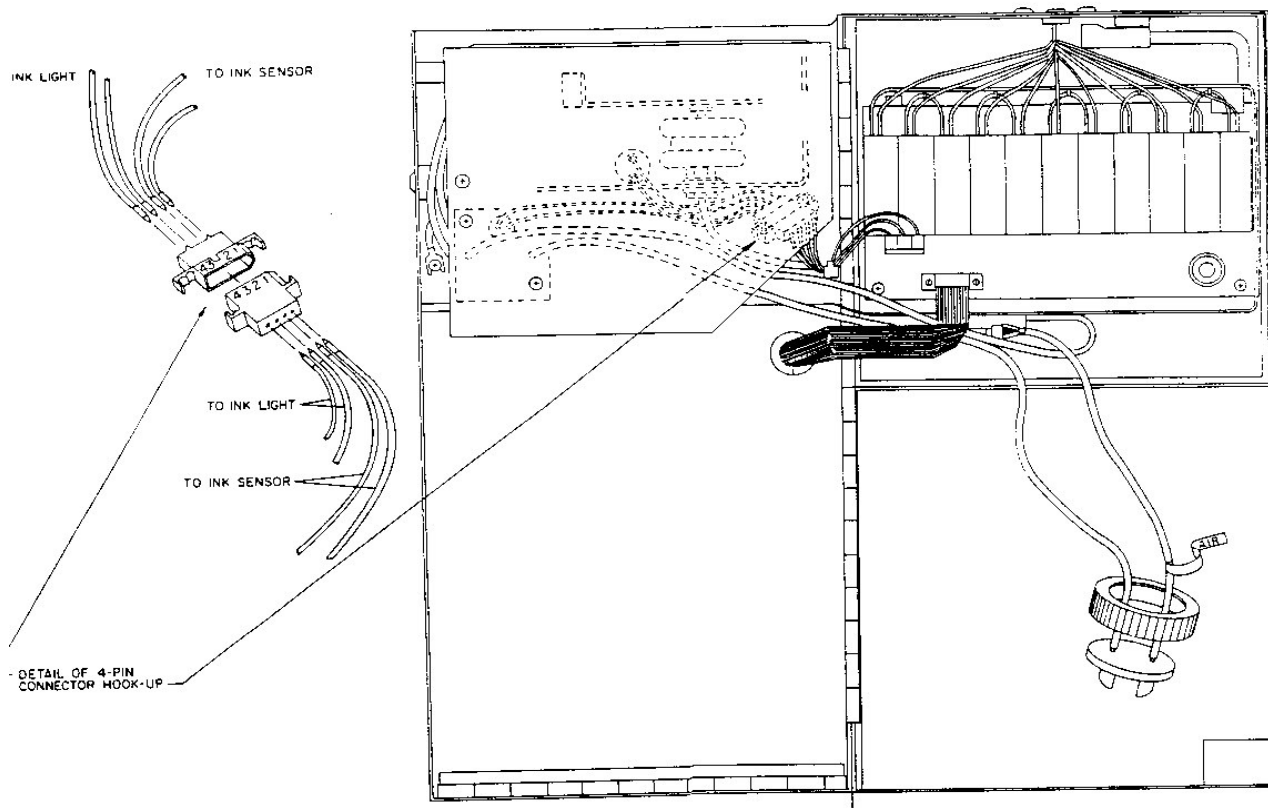


Figure 10.

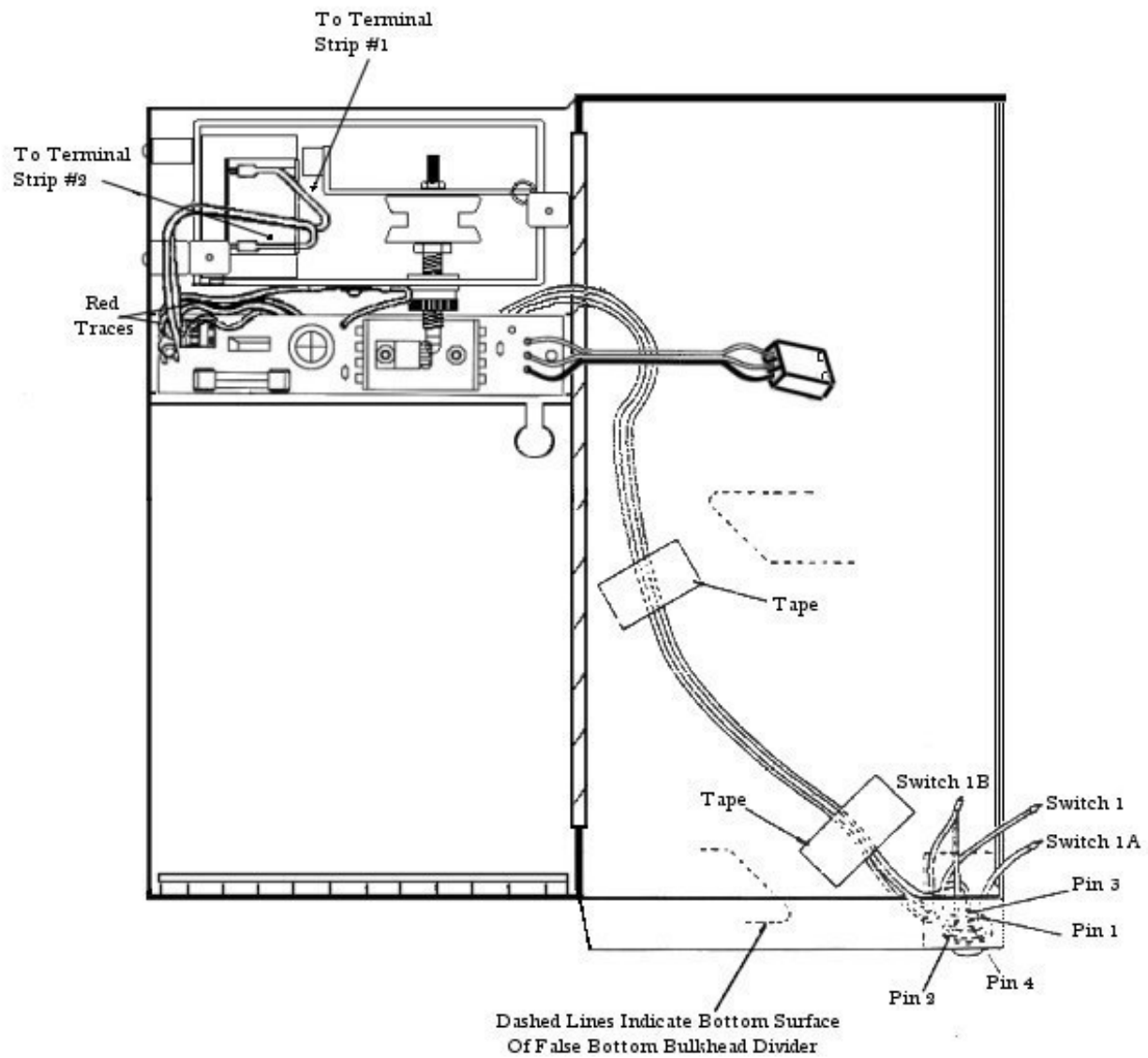
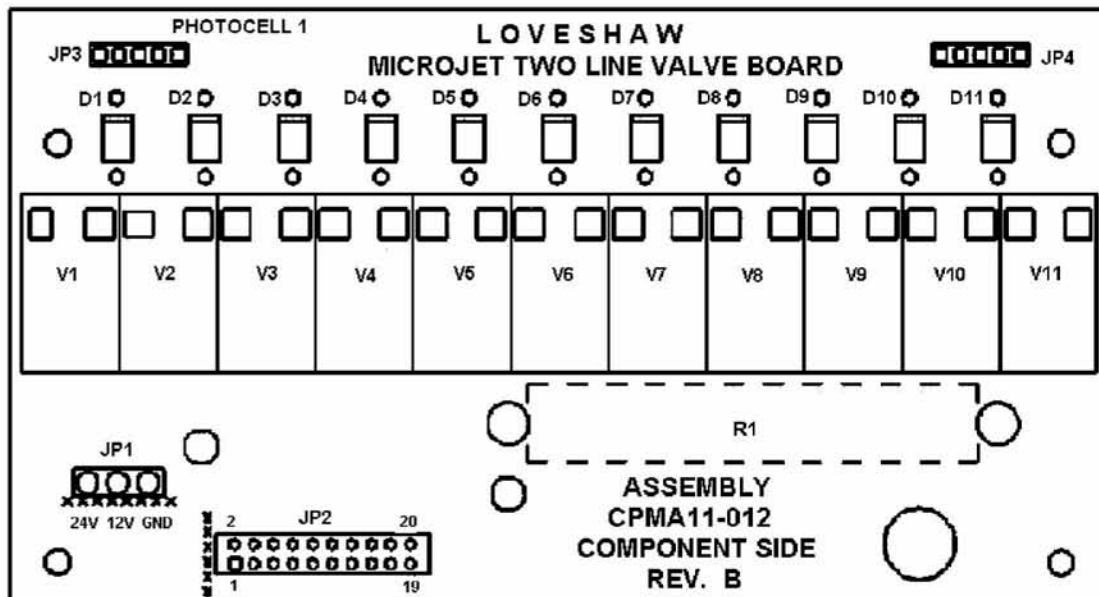
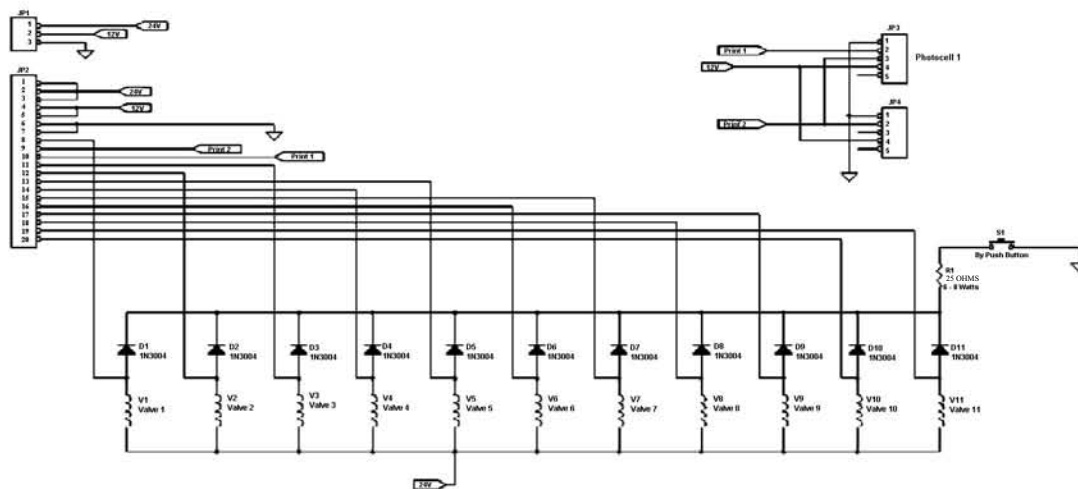
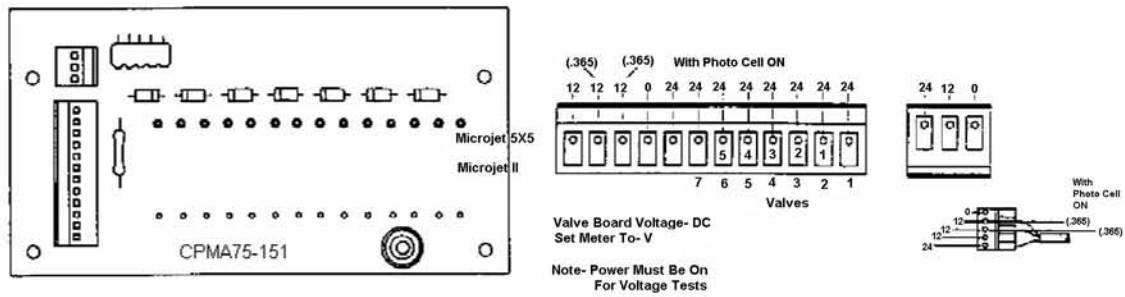
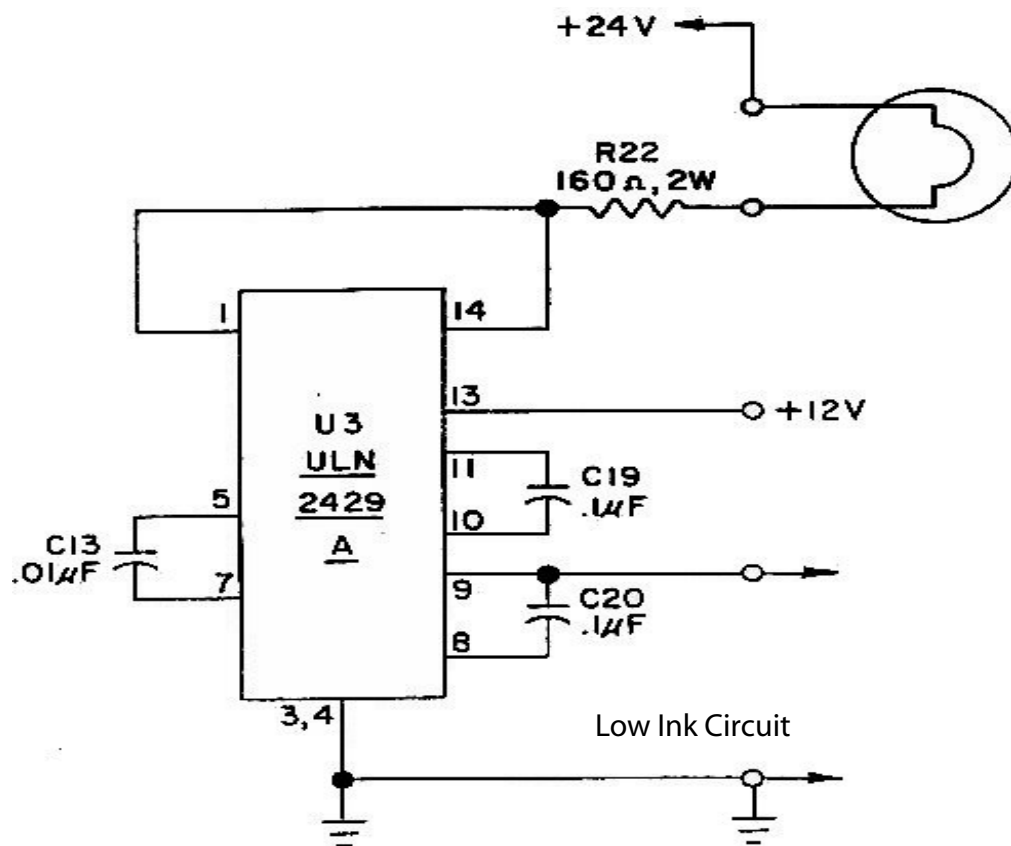
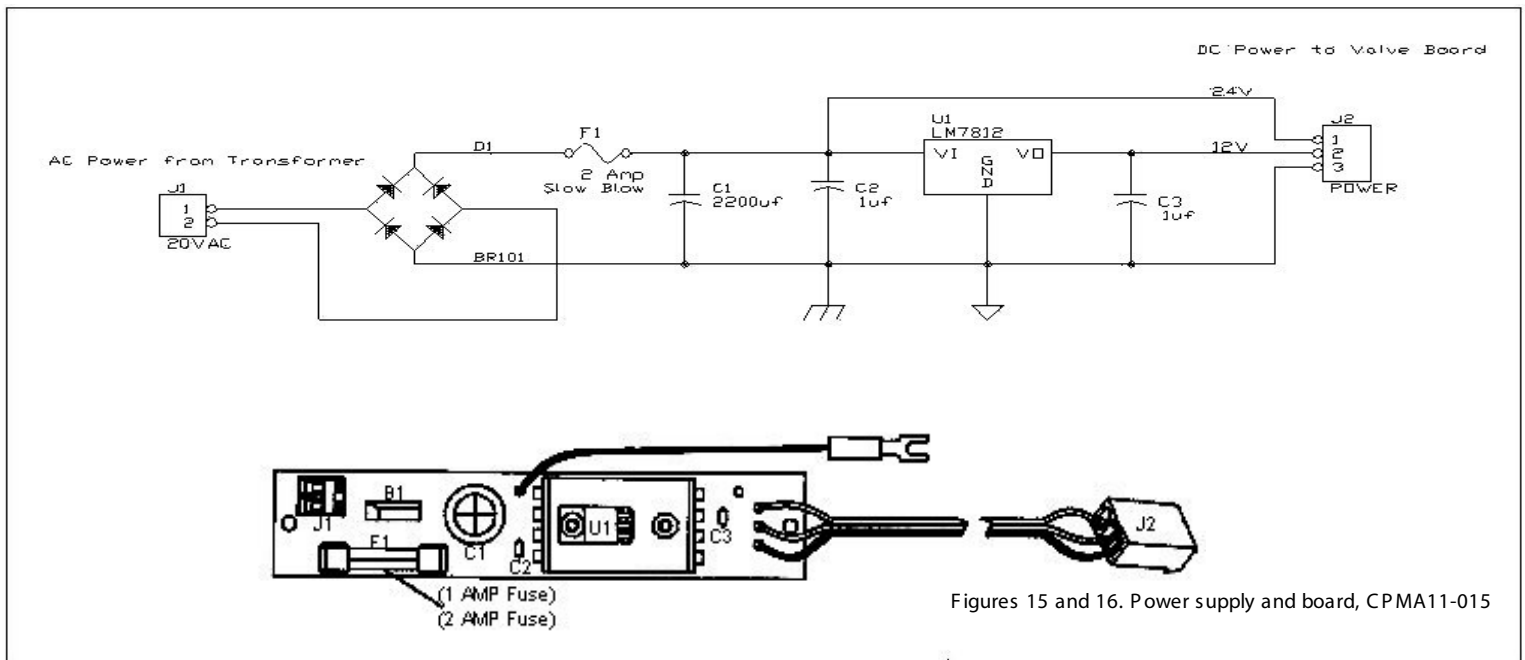
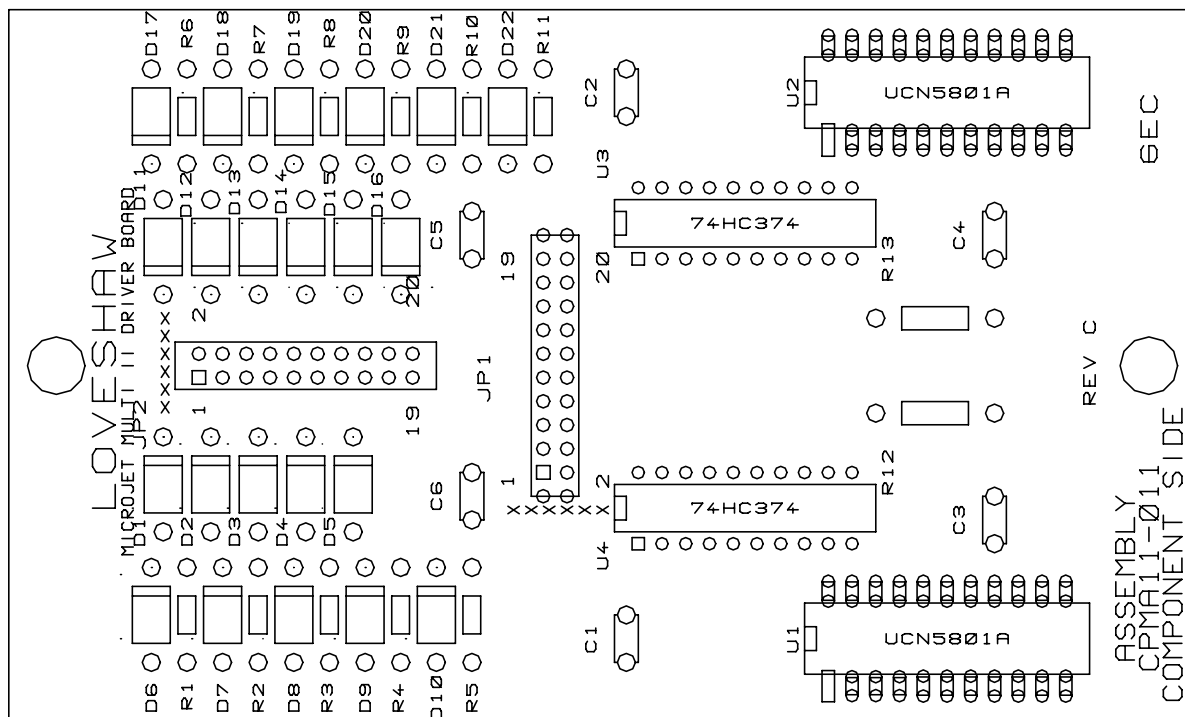
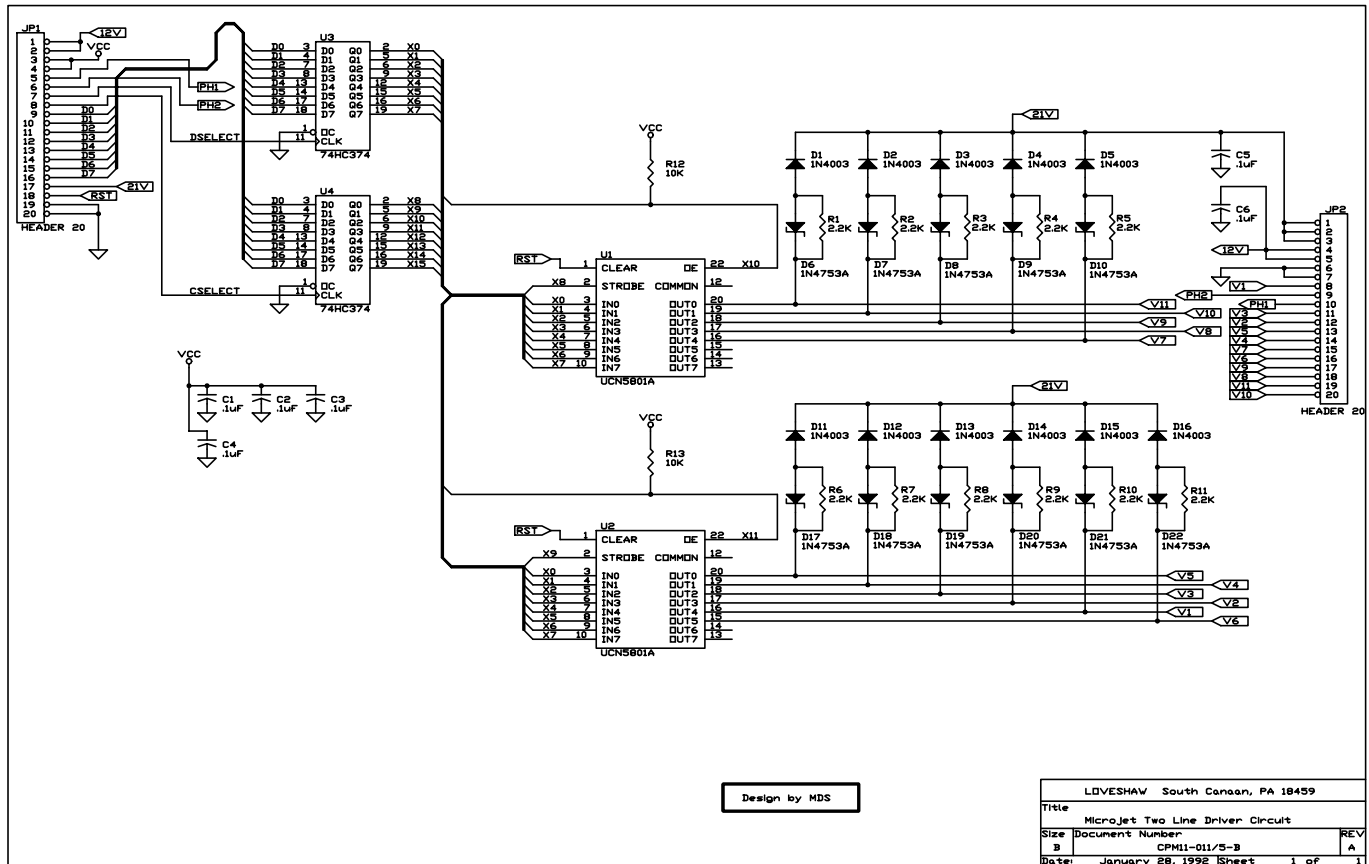


Figure 11.



Figures 12, 13, & 14. Valve Schematic & Board (CPMA11-012, CPMA75-151) And Photocell





Figures 17 and 18. Driver circuit schematic and board CPMA11-011.

MicroJet II and MicroJet 5x5 Parts

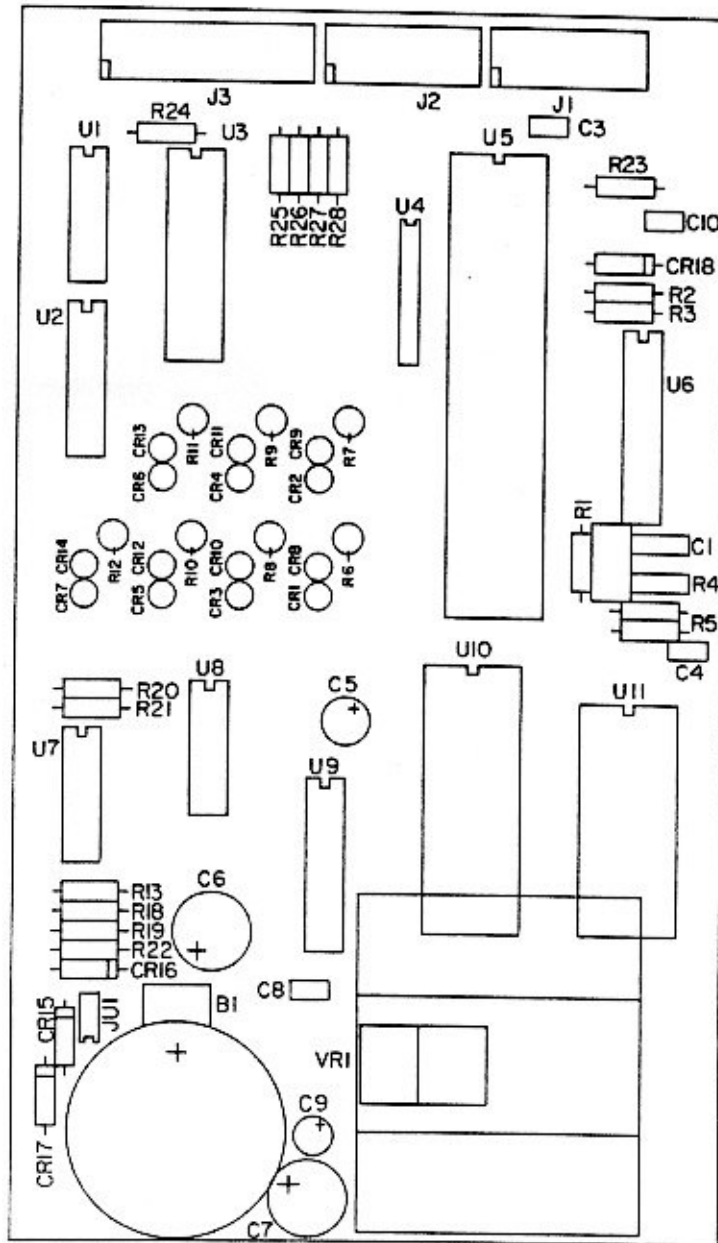


Figure 19. Main Circuit Board (CPM75-012-B).

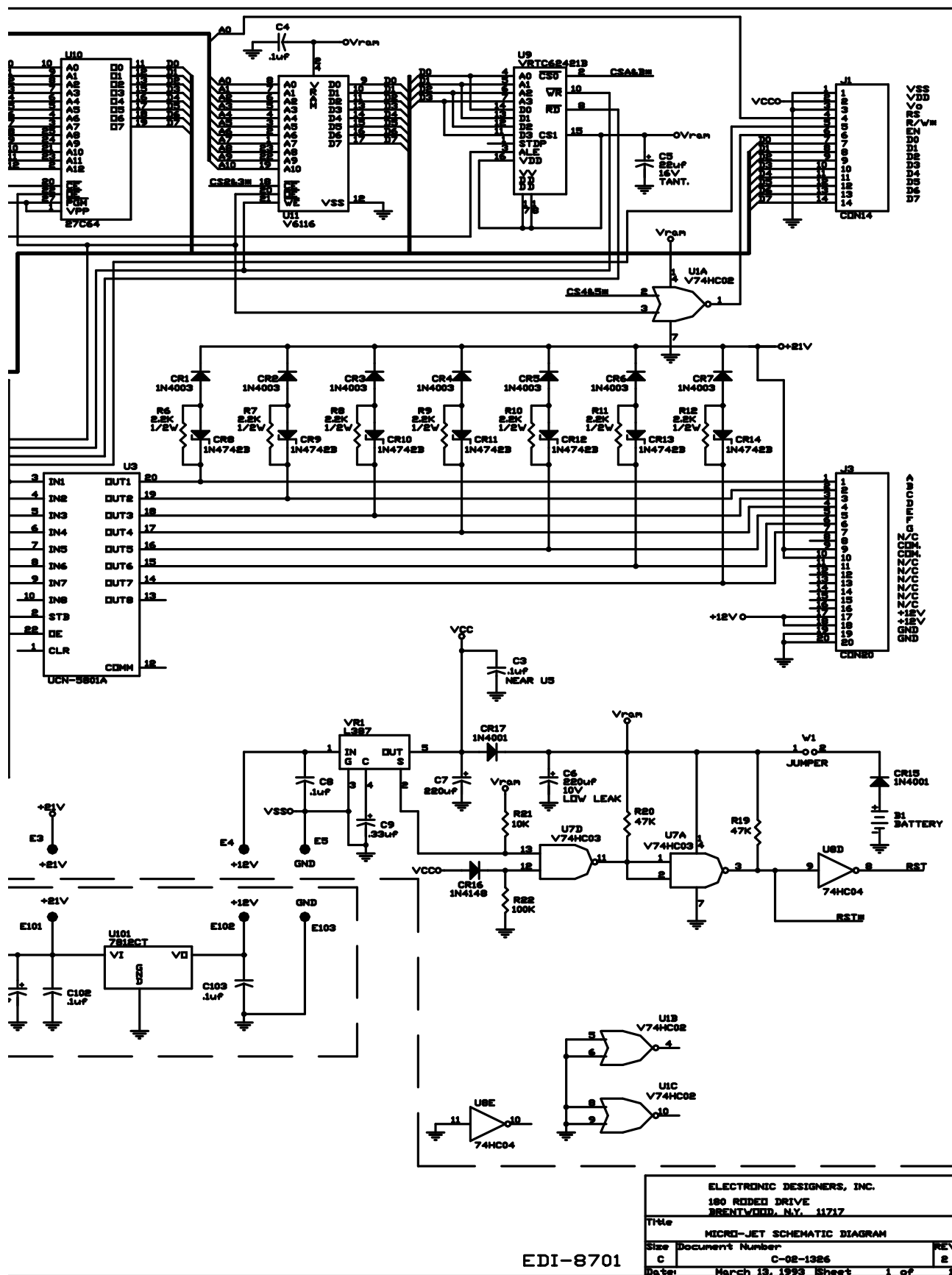


Figure 19b. Main circuit schematic.

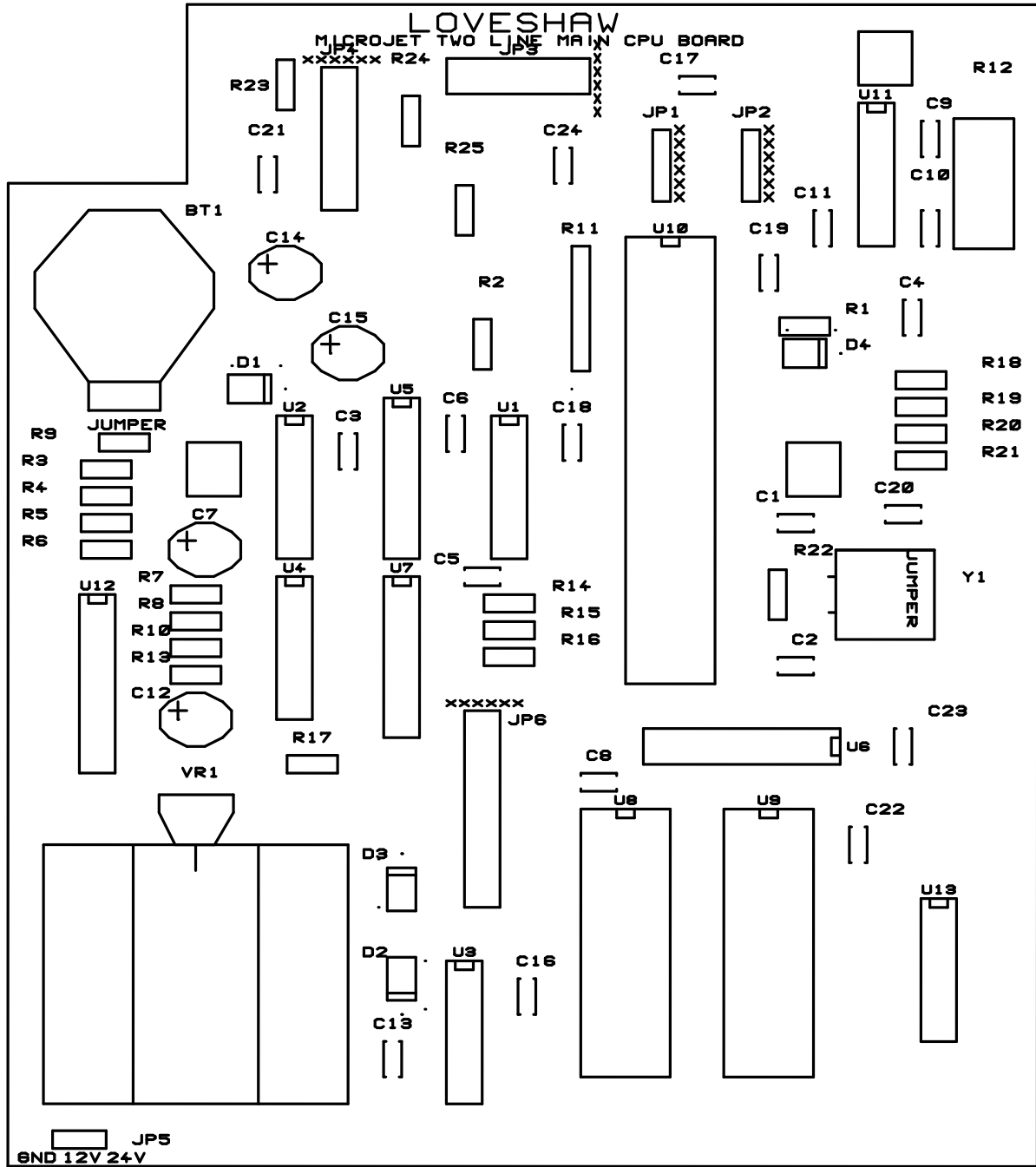
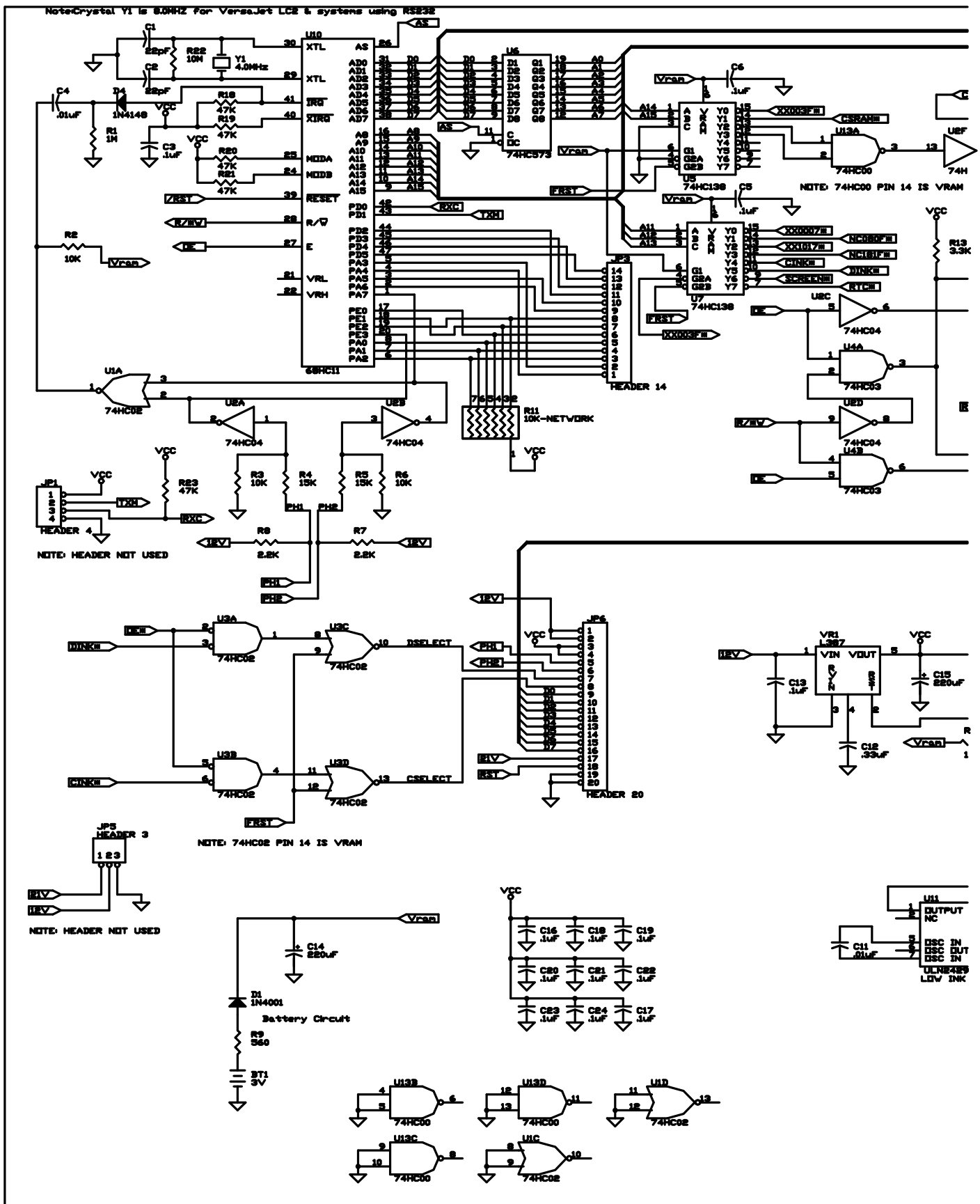


Figure20. Main Circuit Board (CPMA11-010).



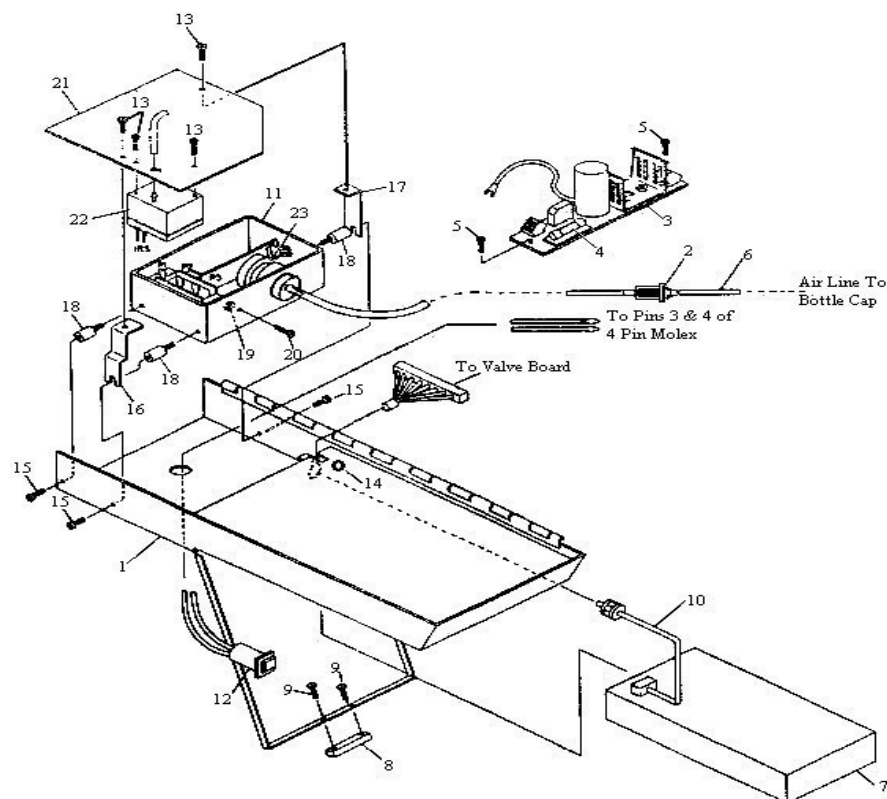


Figure 21.

---Parts List---

Item No.	Part Description	Part No.	Qty.
1	MicrojetShell	CMP55-002-D	1
2	Check Valve	CPM75-115-0	1
3	Power Board	CPM75-004-B	1
	Power Board **/**	CPMA11-015	1
4	Fuse 1 amp	CP40-026-0	1
	Fuse 2 amp **/**	CP40-027-0	1
5	M3 X 8 mm Roundhead Screw	CPM75-S2-002	2
6	Check Valve w/Tube Assembly	CPMA75-104/A	1
7	CPU Assembly (5X5)	CPMA55-108	1
	CPU Assembly (5X7)	CPMA75-102	1
	CPU Assy. w/Rib. Cable	CPMA11-001/5*, /7***, /11**, /16***	1
8	Handle	CPM75-024-A	1
9	M3 X 8 mm Flathead Screw	CPM75-S1-005	2
10	Round CPU Cable	CPM55-102	1
	Coil Cable *	CPMA75-125	1
	Ribbon Cable **	CPMA11-017	1
	Ribbon Cable ***	CPMA16-106	1
11	Air Pump	CPM75-178/A-0	1
12	Low Ink Light	CPM75-055/A-0	1
13	M3 X 6 Roundhead Screw	CPM75-S2-001	4
14	Strain Relief (for coiled/round cable)	CPM75-035-0	1
	Rubber Grommet (for ribbon cable)	CPM75-041-0	1
15	8/32 X 1/4 Roundhead Screw	CPM75-S2-004	3
16	Pump Bracket	CPM75-026/1-A	1
17	Pump Bracket (hinge)	CPM75-206/2-A	1
18	Pump Mount	CPM75-010-0	3
19	8 X 32 Nut	CPM75-N1--002	3
20	M3 X 8 Roundhead (top)	CPM75-S2-002	2
21	Air Pump Cover	CPM75-026-B	1
22	Reservoir Assembly	CPMA75-103	1
23	Bellows for pump with brass knob	CPM75-178/1-0	1
	Bellows for pump with nut	CPM75-005/1-0	1

NOTE- *-Microjet (5x5), **-Multi II (5x11), ***-Multi III (5x16), ****-Microjet II (5x7)

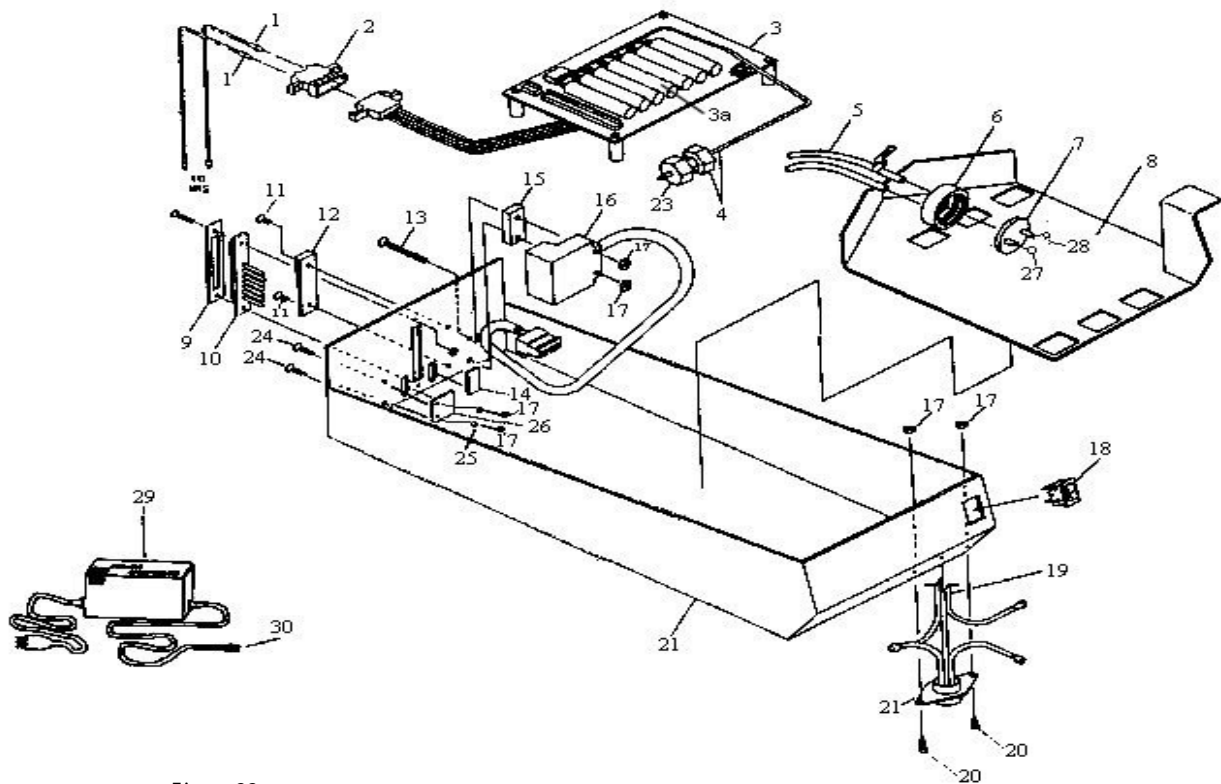


Figure 22.

---Parts List---

tem No.	Part Description	Part No.	Qty.
1	Male Pins	CPCN-052-0	2
2	4 Pin Female Molex Connector	CPCN-012-0	1
3	Valve Baord (5X5 with round CPU cable)	CPMA55-103	
	Valve Board (5X7 with coiled CPU cable)	CPMA75-151	1
	Valve Board **	CPMA11-012	
3a	Sandard Valve	CPJL00-001-0	5/7/11/16
	Long Throw Valve (Hight Speed)	CP00-086-0-LT	
4	Manifold Assembly	Ref. Pg. 29,30,31,32	1
5	Check Valve w/Tubing	CPMA75-104/1	1
6	Bottle Cap Hollow	CPMA75-043-B	1
7	Brass Cap Insert	CPMA75-017-A	1
8	False Bottom	CPM75-001/1-C	1
9	Nozzle Plate Gas ket	CP00-073-A	1
10	Nozzle Plate Assembly	Ref. Pg. 29,30,31,32	1
11	Ft. Head Screw-M3*4	CPM55-S1-001	4
12	Box Guide	Ref. Pg. 29,30,31,32	1-2
13	Flat head Screw- M3*25	MS2M3-25	2
14	Red Photo Cell Filter	CPM75-052-A	1
15	Spacer Replace Block	CPM75-093-0	2
16	Photo Cell w/Connector	CPM75-116-0	1
17	Hex Nut M3	CPM75-N1-001	8
18	Power Switch	CPM75-019-0	1
19	Cable Harness Assy. (3 pin) *** **	CPMA75-101	1
	Cable Harness Assy. (4 pin) ****, *****	CPMA11-002	
20	Round Head Screw M3-8	CPM75-S2-002	2
21	Power Connector ***, ****	CPM75-018-0	1
	Power Connector *****	CPM11-006-0	
22	Microjet Chassis	CPM55-002-2D	1
23	Filter Assy. (brass ends)	CPJ10-017-0	2
	Filter Assy. (white filter)	CPJ10-018-0	1
24	Flat Head Screw- M3*10	CPM75-S1-003	2
25	Star Washer	CPM75-W1-001	2
26	Photo Cell Cover	CPM75-068-A	1
27	Lg. "O" Ring	CPM75-045-0	1
28	Sm "O" Ring	CPM75-044-0	1
29	Transformer 115VAC *** **	CPM75-003-115	1
	Transformer 240VAC *** **	CPM75-003-240	
	Transformer 115VAC *****	CPM11-003-120	
	Transformer 240VAC *****	CPM11-003-240	
30	Connector (3 pin) *** **	CPM75-173-0	1
	Connector (4 pin) ****, *****	CPM11-007-0	

NOTE- *-using Round Cable, *-using Ribbon Cable, ***-Microjet(5x5), ****-Multi I(5x11), *****Multi III(5x16),
 *****Microjet II(5x7)

Exploded View of the Microjet CPU Assembly- CPMA55-108

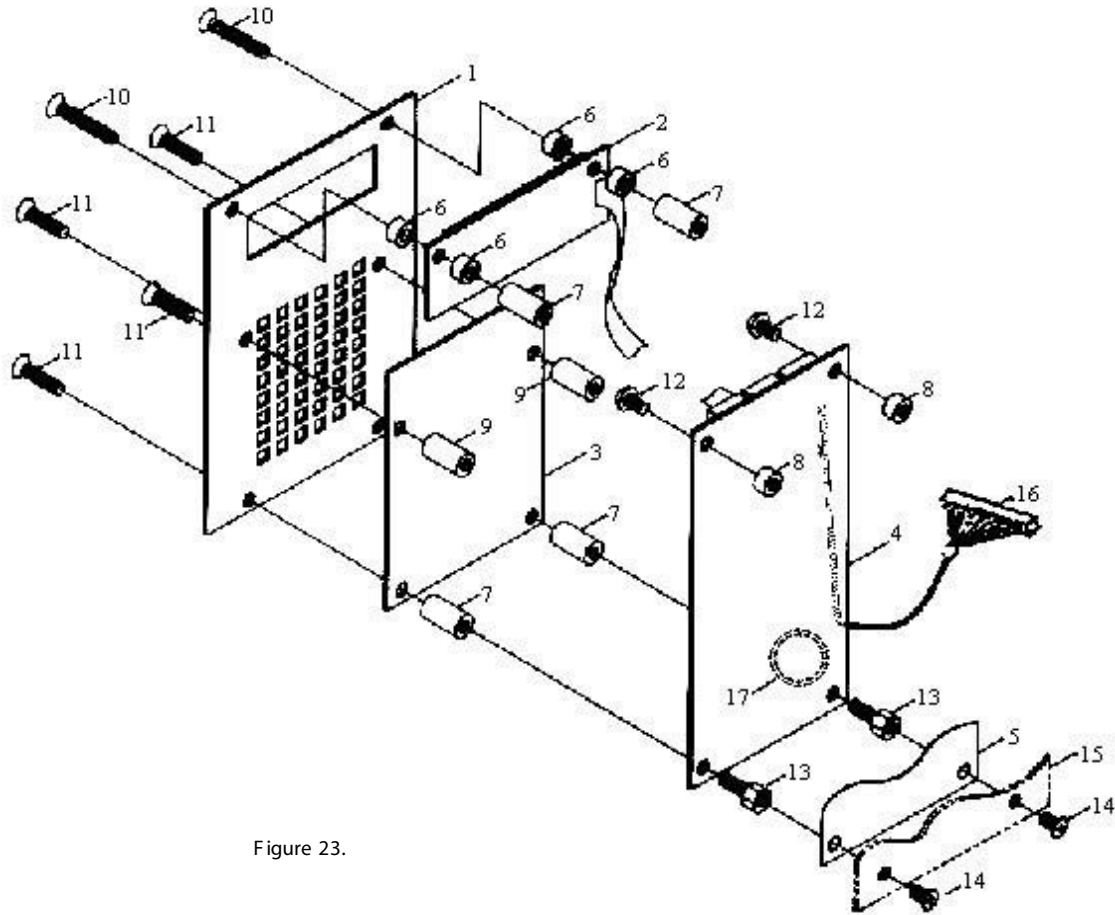


Figure 23.

---Parts List---

Item No.	Part Description	Part No.	Qty.
1.	OVERLAY	CPM55-11-B	1
2.	LCD ASSEMBLY	CPMA75-032	1
3.	KEY BOARD W/PAD	CPM75-020-C	1
4.	CPU PC BOARD	CPMA55-106	1
5.	VULCANIZED PAPER	CPM75-031-B	1
6.	ALUM. SPACER-LCD	CPM55-112-A	4
7.	ALUM. THRD. SPACER	CPM75-136-A	4
8.	NYLON THRD. SPACER	CPMD75-060-A	2
9.	NYLON THRD. SPACER	CPM75-034-A	2
10.	M3 X 20 FL. HD. SCREW	CPM75-S1-007	2
11.	M3 X 12 FL. HD. SCREW	CPM75-S1-006	4
12.	M3 X 6 PAN HD. SCREW	CPM75-S2-001	2
13.	M3 JACK SCREW	CPM55-S3-001	2
14.	M3 X FL. HD. SCREW	CPM55-S1-001	2
15.	P/D CHASSIS	CPM55-002-D	1
16.	ROUND CPU CABLE	CPMA55-102	1
17.	BATTERY (DL2430)	CPMD75-009-0	1
	BATTERY (CR2430) (soldered in)	CPM75-015-0	1

Exploded View of the Microjet II CPU Assembly- CPMA75-102

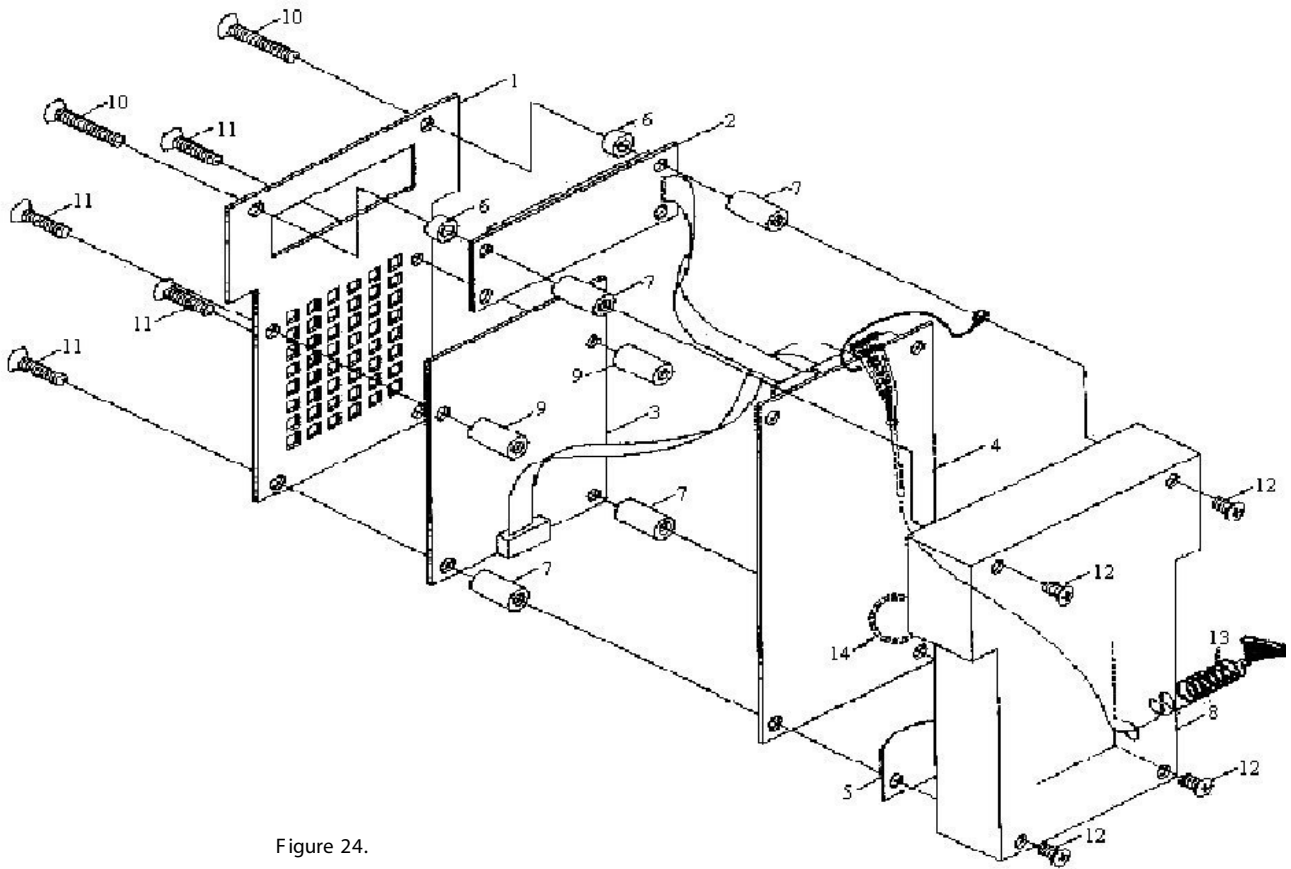


Figure 24.

---Parts List---

Item No.	Part Description	Part No.	Qty.
1.	OVERLAY	CPM75-033/2-B	1
2.	LCD ASSEMBLY	CPMA75-032	1
3.	KEYBOARD W/PAD	CPM75-020-C	1
4.	CPU PC BOARD	CPM75-012-B	1
5.	VULCANIZED PAPER	CPM75-031-B	1
6.	LCD SPACER	CPM75-093-0	2
7.	ALUM. THRD. SPACER	CPM75-136-A	4
8.	HH CPU SHELL	CPM75-002-B	1
9.	NYLON THRE. SPACER	CPM75-034-A	2
10.	M3 X 25 FL. HD. SCREW	CPM75-S1-004	2
11.	M3 X 12 FL. HD. SCREW	CPM75-S1-006	4
12.	M3 X 8 FL. HD. SCREW	CPM75-S1-005	4
13.	COILED CPU CABLE	CPMA75-125	1
14.	BATTERY (DL2430)	CPMD75-009-0	1
	BATTERY (CR2430) (soldered in)	CPM75-015-0	1

Exploded View of the Microjet(CPMA11-001/5), Microjet II(CPMA11-001/7),
Multi II(CPMA11-001) CPU Assembly, using ribbon cable to Valve Board

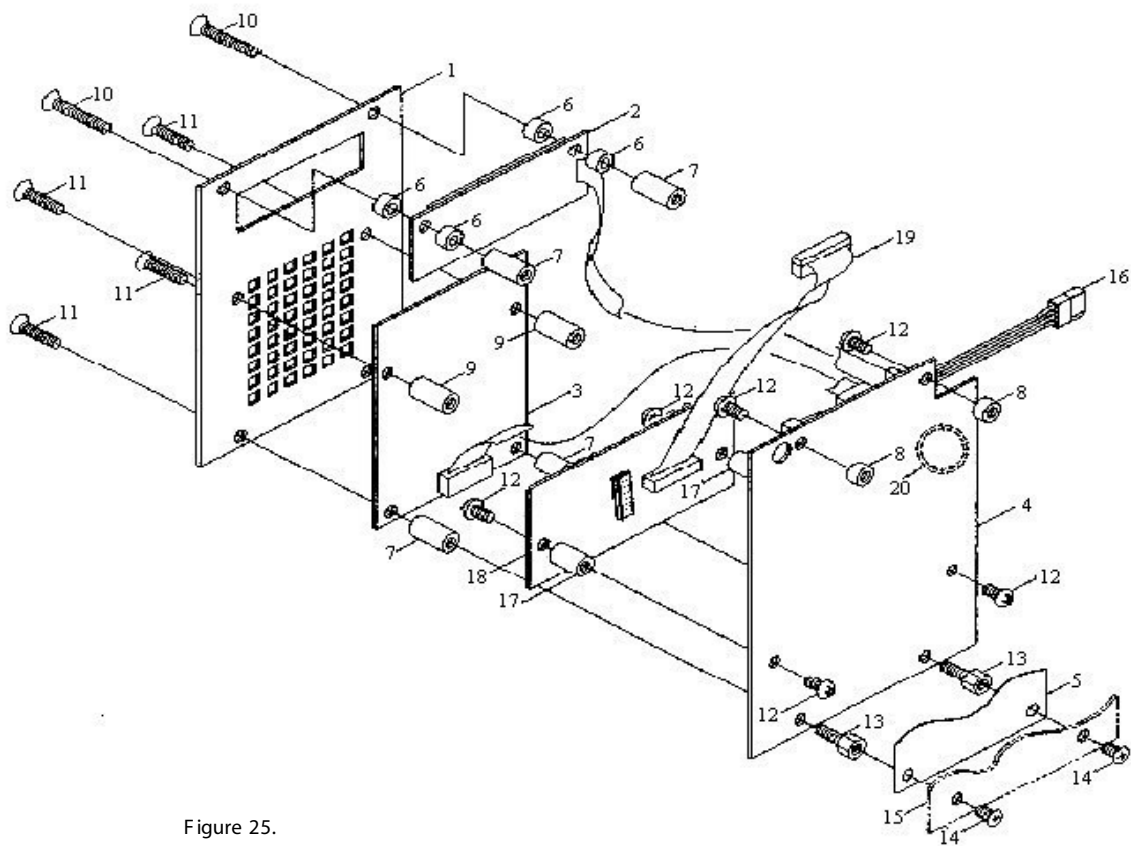


Figure 25.

---Parts List---

NO.	DESCRIPTION	PART NO.	QTY.
1.	OVERLAY	CPM11-004-B	1
2.	LCD ASSEMBLY	CPMA75-032	1
3.	KEYBOARD W/PAD	CPM75-020-C	1
4.	CPU PC BOARD	CPMA11-010	1
5.	VULCANIZED PAPER	CPM11-005-B	1
6.	LCD SPACER	CPM75-093-0	2
7.	ALUM. THRD. SPACER	CPM75-136-A	4
8.	NYLON THRE. SPACER	CPMD75-060-A	2
9.	NYLON THRE. SPACER	CPM75-034-A	2
10.	M3 X 20 FL. HD. SCREW	CPM75-S1-007	2
11.	M3 X 12 FL. HD. SCREW	CPM75-S1-006	4
12.	M3 X 6 FL. HD. SCREW	CPM75-S1-001	6
13.	M3 JACK SCREW	CPM55-S3-001	2
14.	M3 X 4 FL. HD. SCREW	CPM55-S1-001	2
15.	P/O CHASSIS	CPM11-001-D	1
16.	LOW INK CABLE ASSY	CPMA11-016	1
17.	THRE. SPACER	CPM55-107-A	2
18.	DRIVER BOARD	CPMA11-011	1
19.	RIBBON CABLE	CPMA11-017	1
20.	Battery (DL2430)	CPMD75-009-0	1

Exploded View of the Multi III CPU Assembly- CPMA11-001/16

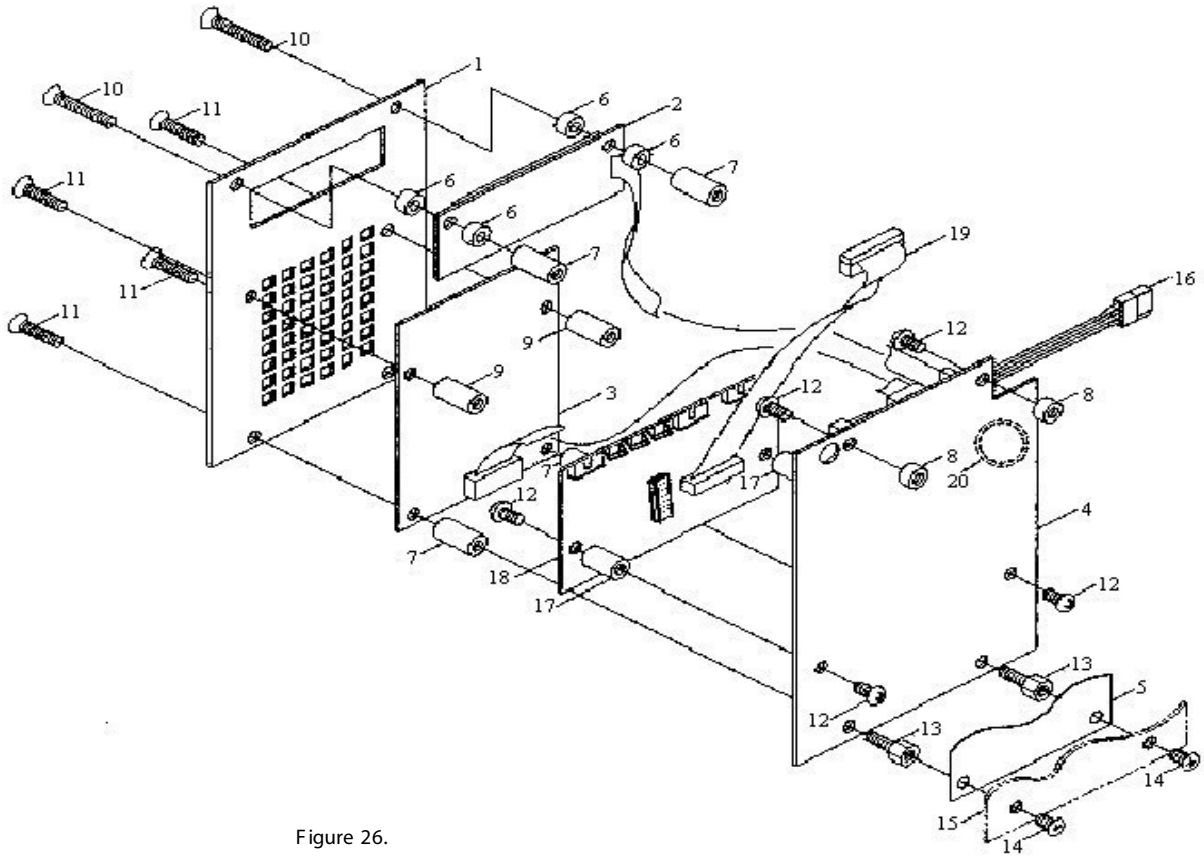


Figure 26.

---Parts List---

Item No.	Part Description	Part No.	Qty.
1.	OVERLAY	CPM11-004-B	1
2.	LCD ASSEMBLY	CPMA75-032	1
3.	KEY BOARD W/PAD	CPM75-020-C	1
4.	CPU PC BOARD	CPMA11-010	1
5.	VULCANIZED PAPER	CPM11-005-B	1
6.	LCD SPACER	CPM75-093-0	2
7.	ALUM. THRD. SPACER	CPM75-136-A	4
8.	NYLON THRE. SPACER	CPMD75-060-A	2
9.	NYLON THRE. SPACER	CPM75-034-A	2
10.	M3 X 20 FL. HD. SCREW	CPM75-S1-007	2
11.	M3 X 12 FL. HD. SCREW	CPM75-S1-006	4
12.	M3 X 6 FL. HD. SCREW	CPM75-S1-001	6
13.	M3 JACK SCREW	CPM55-S3-001	2
14.	M3 X 4 FL. HD. SCREW	CPM55-S1-001	2
15.	P/O CHASSIS	CPM11-001-D	1
16.	LOW INK CABLE ASSY	CPMA11-016	1
17.	THRE. SPACER	CPM55-107-A	2
18.	DRIVER BOARD	CPMA11-011-LC2	1
19.	RIBBON CABLE	CPMA16-106	1
20.	Battery (DL2430)	CPMD75-009-0	1

MICROJET 5X5

Item No.	Transformer	Voltage	Qty	Per
CPM75-003-115	TRANSFORMER - 115V STANDARD		EA	1
CPM75-003-240	TRANSFORMER - 240V STANDARD		EA	1
Loveslaw Corporation				
Item No.	BILL OF MATERIAL		Qty	Per
CPCN-012-0	Component Description		EA	1.
CPJL00-001/L-0	PLUG 4 PIN M N/S		EA	5.
CPMA55-101	VALVE STANDARD LOVESLAW		EA	1.
CPMA11-012/5	5x5 1/2" NOZZLE PLATE ASSEMBLY		EA	1.
CPMA75-151	VALVE BOARD ASSY. (using ribbon cable)		EA	1.
CPMA55-104	VALVE BOARD ASSY. (using round cable)		EA	1.
CPMA11-001/5	MANIFOLD ASSY-5X5		EA	1.
CPMA55-108	CPU/KEYPAD ASSEMBLY (using ribbon cable)		EA	1.
CPMA75-CP	CPU/KEYPAD ASSY. (using round cable)		EA	1.
CPMA75-101	JET PRINTER CARE PACKAGE		EA	1.
CPMA75-103	POWER HARNESS ASSY (3 PINS)		EA	1.
CPMA75-104	RESERVOIR ASSY		EA	1.
CPMA75-126	INK BOTTLE CAP ASSY		EA	1.
CPMD75-087-0	MOUNTING BLOCK ASSY		EA	1.
CPM55-002-D	FOAM, 5-1/2"L X 3/4"H X 1"W		EA	1.
CPM55-014-0	CHASSIS MJ W/UNIVERSAL SCREEN		EA	1.
CPM55-110-0	WIRE - LANYARD 5.5"		EA	1.
CPM75-001/1-C	LATCH - MICROJET LINE		EA	1.
CPM75-004-B	FALSE BOTTOM - PAINTED		EA	1.
CPM75-009-0	POWER BOARD ASSEMBLY (AC-DC)		EA	1.
CP05-003-B	SHIPPING BOX		EA	1.
CPM75-009/1-0	BOX GUIDE- 7/8		EA	2.
CPM75-009/2-0	SHIPPING BOX INSERT		EA	1.
CPM75-010-0	SHIPPING FOAM		EA	2.
CPM75-019-0	PUMP MOUNTS		EA	3.
CPM75-024-A	SWITCH - ON/OFF 24 VOLT		EA	1.
CPM75-026-B	HANDLE FOR CPU DOOR (PAINTED)		EA	1.
CPM75-026/1-A	COVER - AIR PUMP		EA	1.
CPM75-026/2-A	BRACKET - PUMP		EA	1.
CPM75-041-0	BRACKET - PUMP HINGE		EA	1.
CPM75-055/A-0	GROMMET (RUBBER)		EA	1.
CPM75-179-0	LOW INK INDICATOR W/PINS ASSY		EA	1.
CPM75-068-A	PC SUPPORT 1/2 INCH 03420028-A03 EF		EA	4.
	PHOTOCELL COVER		EA	1.
	REPLACES FILM CPM75-052-0 CUT			
CPM75-081-0	CABLE CLAMP - FOR TUBING		EA	1.
CPM75-086-0	TAG - "REMOVE TUBING" FOR A MICROJET		EA	1.
CPM75-087-0	LABEL - FOR INK BOTTLE INSTALLATION		EA	1.
CPM75-091-0	STRIP - THERMAL 1/4 X 3/8 35ft roll		FT	.5
CPM75-092-0	STRIP - THERMAL 1/4 X 1/16 100ft roll		FT	.5
CPM75-116-0	PHOTOCELL W/CONN #SE612W-46182 P		EA	1.
	(5 PIN CONNECTOR AMP)			
CPM55-002-D	CHASSIS MJ W/UNIVERSAL SCREEN M		EA	1.
CPM75-178-0	AIR PUMP - AIR ADJ.		EA	1.
CPM755	MICROJET UNIVERSAL MANUAL		EA	1.
CPM99-001-A	LABEL - FOR THE MICROJET		EA	1.
	TRANSFORMER "GUARANTEE"			
CPM99-014-A	LABEL - QUICK REFERENCE (cpu with ribbon cable)		EA	1.
CPM99-012-A	LABEL - QUICK REFERENCE (cpu with round cable)		EA	1.
CP00-050-A	LABEL-SERIAL AND MODEL NUMBERS P		EA	1.
CP01-001/A-B	"L" BRACKET ASSY		EA	1.
CP10-043-0	SPADE TERMINAL CRIMP		EA	1.
CPM75-041-0	RUBBER GROMMET (used with ribbon cable)		EA	1.
CPM75-035-0	STRAIN RELIEF (for round cpu cable)		EA	1.

MICORJET II

Item No.	Nozzle Plate Size		Qty	Per
CPMA75-111	3/8" NOZZLE PLATE		EA	1.
CPMA75-112	1/2" NOZZLE PLATE		EA	1.
CPMA75-113	7/8" NOZZLE PLATE		EA	1.
CPMA75-114	1 1/4" NOZZLE PLATE		EA	1.
CPMA75-115	1 1/2" NOZZLE PLATE		EA	1.
CPMA75-116	2" NOZZLE PLATE		EA	1.
Item No.	Transformer	Voltage	Qty	Per
CPM75-003-115	TRANSFORMER - 115V STANDARD		EA	1.
CPM75-003-240	TRANSFORMER - 240V STANDARD		EA	1.
Loveshaw Corporation B I L L O F M A T E R I A L				
Item No.	Component Description		Qty	Per
CPCN-012-0	PLUG 4 PIN M N/S		EA	1.
CPJL00-001/L-0	VALVE STANDARD LOVESHAW		EA	7.
CPMA11-012/7	VALVE BOARD ASSY. (using ribbon cable)		EA	1.
CPMA75-151	VALVE BOARD ASSY. (using coiled cable)		EA	1.
CPMA75-118	MANIFOLD ASSY.-5X7		EA	1.
CPMA11-001/7	MJ 5X7 CPU/KEY PAD ASSY. (using ribbon cable)		EA	1.
CPMA75-102	MJ 5X7 CPU/KEY PAD ASSY. (using coiled cable)		EA	1.
CP05-003-B	BOX GUIDE- 7/8		EA	2.
CPM75-041-0	RUBBER GROMMET (used with ribbon cable)		EA	1.
CPM75-009-0	STRAIN RELIEF (used with coiled cable)		EA	1.
CPM75-041-0	RUBBER GROMMET (used with ribbon cable)		EA	1.
CPMA75-CP	JET PRINTER CARE PACKAGE		EA	1.
CPMA75-101	POWER HARNESS ASSY. (3 PINS)		EA	1.
CPMA75-103	RESERVOIR ASSY.		EA	1.
CPMA75-104	INK BOTTLE CAP ASSY		EA	1.
CPMA75-126	MOUNTING BLOCK ASSY		EA	1.
CPMD75-087-0	FOAM, 5-1/2"L X 3/4"H X 1"W		EA	1.
CPM55-002-D	CHASSIS MJ W/UNIVERSAL SCREEN		EA	1.
CPM55-014-0	WIRE - LANYARD 5.5"		EA	1.
CPM55-110-0	LATCH - MICROJET LINE		EA	1.
CPM75-001/1-C	FALSE BOTTOM - PAINTED		EA	1.
CPM75-004-B	POWER BOARD ASSEMBLY (AC-DC)		EA	1.
CPM75-009-0	SHIPPING BOX		EA	1.
CPM75-009/1-0	SHIPPING BOX INSERT		EA	1.
CPM75-009/2-0	SHIPPING FOAM		EA	2.
CPM75-010-0	PUMP MOUNTS		EA	3.
CPM75-019-0	SWITCH - ON/OFF 24 VOLT		EA	1.
CPM75-024-A	HANDLE FOR CPU DOOR (PAINT)		EA	1.
CPM75-026-B	COVER - AIR PUMP		EA	1.
CPM75-026/1-A	BRACKET - PUMP		EA	1.
CPM75-026/2-A	BRACKET - PUMP HINGE		EA	1.
CPM75-041-0	GROMMET (RUBBER)		EA	1.
CPM75-055/A-0	LOW INK INDICATOR W/ PINS ASSY		EA	1.
CPM75-179-0	PC SUPPORT 1/2 INCH 03420028-A03 EF		EA	4.
CPM75-068-A	PHOTOCELL COVER		EA	1.
REPLACES FILM CPM75-052-0 CUT				
CPM75-081-0	CABLE CLAMP - FOR TUBING		EA	1.
CPM75-086-0	TAG - "REMOVE TUBING" FOR A MICROJET		EA	1.
CPM75-087-0	LABEL - FOR INK BOTTLE INSTALLATION		EA	1.
CPM75-091-0	STRIP - THERMAL 1/4 X 3/8 35ft roll		FT	.5
CPM75-092-0	STRIP - THERMAL 1/4 X 1/16 100ft roll		FT	.5
CPM75-116-0	PHOTOCELL W/CONN #SE612W-46182 P		EA	1.
(5 PIN CONNECTOR AMP)				
CPM55-002-D	CHASSIS MJ W/UNIVERSAL SCREEN M		EA	1.
CPM75-178-0	AIR PUMP - AIR ADJ.		EA	1.
CPM755116	MICROJET UNIVERSAL MANUAL		EA	1.
CPM99-001-A	LABEL - FOR THE MICROJET		EA	1.
TRANSFORMER - "GUARANTEE"				
CPM99-014-A	LABEL - QUICK REFERENCE (for cpu with ribbon cable)		EA	1.
CPM99-012-A	LABEL - QUICK REFERENCE (for cpu with coiled cable)		EA	1.
CP00-050-A	LABEL-SERIAL AND MODEL NUMBERS P		EA	1.
CP01-001/A-B	"L" BRACKET ASSY		EA	1.
CP10-043-0	SPADE TERMINAL CRIMP		EA	1.
CPM75-035-0	STRAIN RELIEF (for coiled cpu cable)		EA	1.

MICROJET MULTI II

Item No.	Nozzle Plate Size	Qty Per
CPMA11-014	1" NOZZLE PLATE	EA 1.
CPMA11-014/2	2" NOZZLE PLATE	EA 1.
Item No.	Transformer Voltage	Qty Per
CPM11-003-120	TRANSFORMER-120V 2AMP	EA 1.
CPM11-003-240	TRANSFORMER-240V 2AMP	EA 1.

Loveshaw Corporation

B I L L O F M A T E R I A L

Item No.	Component Description	Qty Per
CPCN-012-0	PLUG 4 PIN M N/S	EA 1.
CPJL00-001/L-0	VALVE STANDARD LOVESHAW	EA 11.
CPMA11-001	MJ MULTI CPU/KEYPAD ASSEMBLY	EA 1.
CPMA11-002	POWER CABLE HARNESS ASSY MULTI M 4 PINS	EA 1.
CPMA11-012	VALVE BD ASSY MJ MULTI II	EA 1.
CPMA11-013	MANIFOLD ASSY MULTI II	EA 1.
CPMA11-015	POWER BOARD ASSY 2AMP	EA 1.
CPMA75-CP	JET PRINTER CARE PACKAGE	EA 1.
CPMA75-103	RESERVOIR ASSY	EA 1.
CPMA75-104	INK BOTTLE CAP ASSY	EA 1.
CPMA75-126	MOUNTING BLOCK ASSY	EA 1.
CPMD75-087-0	FOAM, 5-1/2"L X 3/4"H X 1"W	EA 1.
CPM55-002-D	CHASSIS MJ W/UNIVERSAL SCREEN	EA 1.
CPM7555116	MICROJET UNIVERSAL MANUAL	EA 1.
CPM55-014-0	WIRE - LANYARD 5.5"	EA 1.
CPM55-110-0	LATCH - MICROJET LINE	EA 1.
CPM75-001/1-C	FALSE BOTTOM - PAINTED	EA 1.
CPM75-009-0	SHIPPING BOX	EA 1.
CPM75-009/1-0	SHIPPING BOX INSERT	EA 1.
CPM75-009/2-0	SHIPPING FOAM	EA 2.
CPM75-010-0	PUMP MOUNTS	EA 3.
CPM75-019-0	SWITCH - ON/OFF 24 VOLT	EA 1.
CPM75-024-A	HANDLE FOR CPU DOOR (PAINTED)	EA 1.
CPM75-024-A	BOX GUIDE- 7/8	EA 2.
CPM75-026-B	COVER - AIR PUMP	EA 1.
CPM75-026/1-A	BRACKET - PUMP	EA 1.
CPM75-041-0	GROMMET (RUBBER)	EA 2.
CPM75-026/2-A	BRACKET - PUMP HINGE	EA 1.
CPM75-055/A-0	LOW INK INDICATOR W/PINS ASSY	EA 1.
CPM75-179-0	PC SUPPORT 1/2 INCH 03420028-A03 EF	EA 4.
CPM75-068-A	PHOTOCELL COVER	EA 1.
	REPLACES FILM CPM75-052-0 CUT	
CPM75-081-0	CABLE CLAMP - FOR TUBING	EA 1.
CPM75-086-0	TAG - "REMOVE TUBING" FOR A MICROJET	EA 1.
CPM75-087-0	LABEL - FOR INK BOTTLE INSTALLATION	EA 1.
CPM75-091-0	STRIP - THERMAL 1/4 X 3/8 35ft roll	FT .5
CPM75-092-0	STRIP - THERMAL 1/4 X 1/16 100ft roll	FT .5
CPM75-116-0	PHOTOCELL W/CONN #SE612W-46182 P (5 PIN CONNECTOR AMP)	EA 1.
CPM75-178-0	AIR PUMP - AIR ADJ.	EA 1.
CPM99-001-A	LABEL - FOR THE MICROJET TRANSFORMER "GUARANTEE"	EA 1.
CPM99-014-A	LABEL - QUICK REFERENCE	EA 1.
CP00-050-A	LABEL-SERIAL AND MODEL NUMBERS	EA 1.
CP01-001/A-B	"L" BRACKET ASSY	EA 1.
CP10-043-0	SPADE TERMINAL CRIMP	EA 1.

MICROJET MULTI III

Item No.	Nozzle Plate Size	Qty Per
CPMA 16-105	1 1/4" NOZZLE PLATE	EA 1.
CPMA 16-106	2 7/32" NOZZLE PLATE	EA 1.
Item No.	Transformer Voltage	Qty Per
CPM11-003-120	TRANSFORMER - 120V 2AMP	EA 1.
CPM11-003-240	TRANSFORMER - 240V 2AMP	EA 1.

Loveshaw Corporation

B I L L O F M A T E R I A L

Item No.	Component Description	Qty Per
CPCN-012-0	PLUG 4 PIN N/S	EA 1.
CPJL00-001-0	VALVE STANDARD	EA 16.
CPMA 11-001	MJ MULTI CPU/KEYPAD ASSEMBLY	EA 1.
CPMA 11-002	POWER CABLE HARNESS ASSY MULTI 4 PINS	EA 1.
CPMA 16-012	MULTI III VALVE BOARD ASSY 16	EA 1.
CPMA 16-104	MANIFOLD ASSEMBLY MULTI 111	EA 1.
CPMA 11-015	POWER BOARD ASSY 2AMP	EA 1.
CPMA75-CP	JET PRINTER CARE PACKAGE	EA 1.
CPMA75-103	RESERVOIR ASSY	EA 1.
CPMA75-104	INK BOTTLE CAP ASSY	EA 1.
CPMA75-126	MOUNTING BLOCK ASSY	EA 1.
CPMD75-087-0	FOAM, 5-1/2"L X 3/4"H X 1"W	EA 1.
CPM55-002-D	CHASSIS MJ W/UNIVERSAL SCREEN	EA 1.
CPMA 16-105	MULTI III NOZZLE PLATE ASSY	EA 1.
CPM7555116	MICROJET UNIVERSAL MANUAL	EA 1.
CPM55-014-0	WIRE - LANYARD 5.5"	EA 1.
CPM55-110-0	LATCH - MICROJET LINE	EA 1.
CPM75-001/1-C	FALSE BOTTOM - PAINTED	EA 1.
CPM75-009-0	SHIPPING BOX	EA 1.
CPM75-009/1-0	SHIPPING BOX INSERT	EA 1.
CPM75-009/2-0	SHIPPING FOAM	EA 2.
CPM75-010-0	PUMP MOUNTS	EA 3.
CPM75-019-0	SWITCH - ON/OFF 24 VOLT	EA 1.
CPM75-024-A	HANDLE FOR CPU DOOR (PAINTED)	EA 1.
CP08-003-B	BOX GUIDE 2"	EA 1.
CPM75-026-B	COVER - AIR PUMP	EA 1.
CPM75-026/1-A	BRACKET - PUMP	EA 1.
CPM75-041-0	GROMMET (RUBBER)	EA 2.
CPM75-026/2-A	BRACKET - PUMP HINGE	EA 1.
CPM75-055/A-0	LOW INK INDICATOR W/PINS ASSY	EA 1.
CPM75-179-0	PC SUPPORT 1/2 INCH 03420028-A03 EF	EA 4.
CPM75-068-A	PHOTOCELL COVER REPLACES FILM	
	CPM75-052-0 CUT	EA 1.
CPM75-081-0	CABLE CLAMP - FOR TUBING	EA 1.
CPM75-086-0	TAG - "REMOVE TUBING" FOR A MICROJET	EA 1.
CPM75-087-0	LABEL - FOR INK BOTTLE INSTALLATION	EA 1.
CPM75-091-0	STRIP - THERMAL 1/4 X 3/8 35ft roll	FT .5
CPM75-092-0	STRIP - THERMAL 1/4 X 1/16 100ft roll	FT .5
CPM75-116-0	PHOTOCELL W/CONN #SE612W-46182	EA 1.
	(5 PIN CONNECTOR AMP)	
CPM75-178-0	AIR PUMP - AIR ADJ.	EA 1.
CPM99-001-A	LABEL - FOR THE MICROJET	EA 1.
	TRANSFORMER "GUARANTEE"	
CPM99-015-A	LABEL - QUICK REFERENCE	EA 1.
CP00-050-A	LABEL-SERIAL AND MODEL NUMBERS	EA 1.
CP01-001/A-B	"L" BRACKET ASSY	EA 1.
CP10-043-0	SPADE TERMINAL CRIMP	EA 1.

Microjet Ink Jet Printer Software Change Procedure (Units with coiled or round cable from CPU)

" PLEASE READ THROUGH FIRST BEFORE ATTEMPTING SOFTWARE CHANGE "

To change software, you must do the following steps:

- A. Turn power OFF and remove power cord to the unit.
- B. With a Philip head screwdriver, unscrew the four screws from the inside lid cover. Then remove the CPU assembly from the unit.
- C. Locate the EPROM on the Main CPU board located in its socket at position U10. This EPROM will have a tag on the top to identify its software revision.
- D. With a small flat blade screwdriver, carefully pry the EPROM out of its socket.
- E. Now remove the new EPROM from the anti-static container and insert the EPROM in the U10 socket.

NOTE: Before removal, observe the position on the notch on the side of the EPROM.

The socket will also have a notch on one end as well. This is used to guide so that the EPROM can be oriented the correct way and then inserted.

F. When plugging in the new EPROM, verify that all of the legs are in the socket and are not curled up under the EPROM.

G. Store the old EPROM in the anti-static container for possible reuse if there is a problem. Do not discard this chip. Either keep it or if asked return it to LOVESHAW. In any case keep it available until the unit has been used a few days.

H. Insuring the Vulcanized Paper backing is on the assembly, install the assembly into the unit and replace the screws.

I. The pump cover plate may have been move when removing the screws and the unit may not close. Adjust the pump cover if necessary.

J. Reconnect the power cord and power up the unit.

K. Clear the unit by using 66SLAM procedure explained in the operators manual.

L. Reset the clock.

M. Now the ink jet printer is ready for programming. Refer to any enclosed manuals for further details of the new options included in this new version. If no manual is enclosed the options are self-explanatory.

If questions should arise, please contact the LOVESHAW Jet Printer Service Department at (570) 937-4921 or at 1(800) 962-2633 . Thank you.

" PLEASE READ THROUGH FIRST BEFORE ATTEMPTING SOFTWARE CHANGE "

Microjet Ink Jet Printer Software Change Procedure (Units with ribbon cable from CPU)

" PLEASE READ THROUGH FIRST BEFORE ATTEMPTING SOFTWARE CHANGE "

To change software, you must do the following steps:

- A. Turn power OFF and remove power cord to the unit.
- B. With a Philip head screwdriver, unscrew the four screws from the inside lid cover. Then remove the CPU assembly from the unit.
- C. Using the screwdriver remove the two screws from the top Piggy-Back Driver board from the Main CPU board. Then unplug the two boards.
- D. Locate the EPROM on the Main CPU board located in its socket at position U9. This EPROM will have a tag on the top to identify its software revision.
- E. With a small flat blade screwdriver, carefully pry the EPROM out of its socket.
- F. Now remove the new EPROM from the anti-static container and insert the EPROM in the U9 socket.

NOTE: Before removal, observe the position on the notch on the side of the EPROM.

The socket will also have a notch on one end as well. This is used to guide so that the EPROM can be oriented the correct way and then inserted.

G. When plugging in the new EPROM, verify that all of the legs are in the socket and are not curled up under the EPROM.

H. Store the old EPROM in the anti-static container for possible reuse if there is a problem. Do not discard this chip. Either keep it or if asked return it to LOVESHAW. In any case keep it available until the unit has been used a few days.

I. After the EPROM installation is complete, reconnect the Driver board to the Main CPU insuring that it is correctly connected. Then replace the screws.

J. Insuring the Vulcanized Paper backing is on the assembly, install the assembly into the unit and replace the screws.

K. The pump cover plate may have been move when removing the screws and the unit may not close. Adjust the pump cover if necessary.

L. Reconnect the power cord and power up the unit.

M. Clear the unit by using 66SLAM procedure explained in the operators manual.

N. Reset the clock.

O. Now the ink jet printer is ready for programming. Refer to any enclosed manuals for further details of the new options included in this new version. If no manual is enclosed the options are self-explanatory.

If questions should arise, please contact the LOVESHAW Jet Printer Service Department at 1(570) 937-4921 or at 1(800) 962-2633. Thank you.

" PLEASE READ THROUGH FIRST BEFORE ATTEMPTING SOFTWARE CHANGE "

Warranty

LITTLE DAVID MicroJet

This warranty is made exclusive of all other warranties and guarantees, written or oral, expressed or implied.

The only obligation of the manufacturer and seller of Little David MicroJet shall be to replace or repair exclusive of shipping charges any mechanical part proved to be defective, provided the defect occurs within 90 days after date of purchase, and further provided the item is returned prepaid to the Loveshaw Corporation factory.

The only exception to the above: V valves are guaranteed for 24 months from date of purchase.

Purchaser shall, before purchasing, determine the fitness and suitability of the said product Little David MicroJet 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, OTHER THAN LO VESHAW'S
SPECIALLY FORMULATED INK, VOIDS THIS
WARRANTY.

No statement or recommendation not contained herein shall have force of effect unless in a written agreement signed by officers of the seller and the manufacturer.

Note: A policy of the Loveshaw Corporation is to continually improve its products. Therefore, the right is reserved to alter the design and/or specifications of the Little David MicroJet at any time and without notice.



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