Vale-tech

Ink Dispensing System
I.D.S. 10K Mk II

User Manual

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Issue No. 25/03/2004

Introduction

The following manual endeavors to provide the user with a comprehensive guide to their machine.

The User Manual identifies the requirements for the initial installation of the machine and continues to supply information for the effective operation of the machine on a day-to-day basis, including maintenance to ensure a high standard of ink dispensing can be consistently achieved.

The Service section of this manual enables the user to identify any spare parts that may need to be ordered for the machine. This product has been manufactured to the highest standards; however, should any difficulties arise, before requesting technical support a speedier resolution can usually be reached by referring to the trouble-shooting guide within this section. A full set of drawings is also provided to assist in faultfinding in the unlikely event of the product developing a fault.

Full Ink Manager Software training is provided within the Training manual to ensure that the user can feel confident with the machines operation.

The Service Log at the back of this manual serves to provide contact information; should additional assistance be required please refer to the contact details supplied within this section. Forms available in this section allow the service history of the machine to be recorded for future reference.

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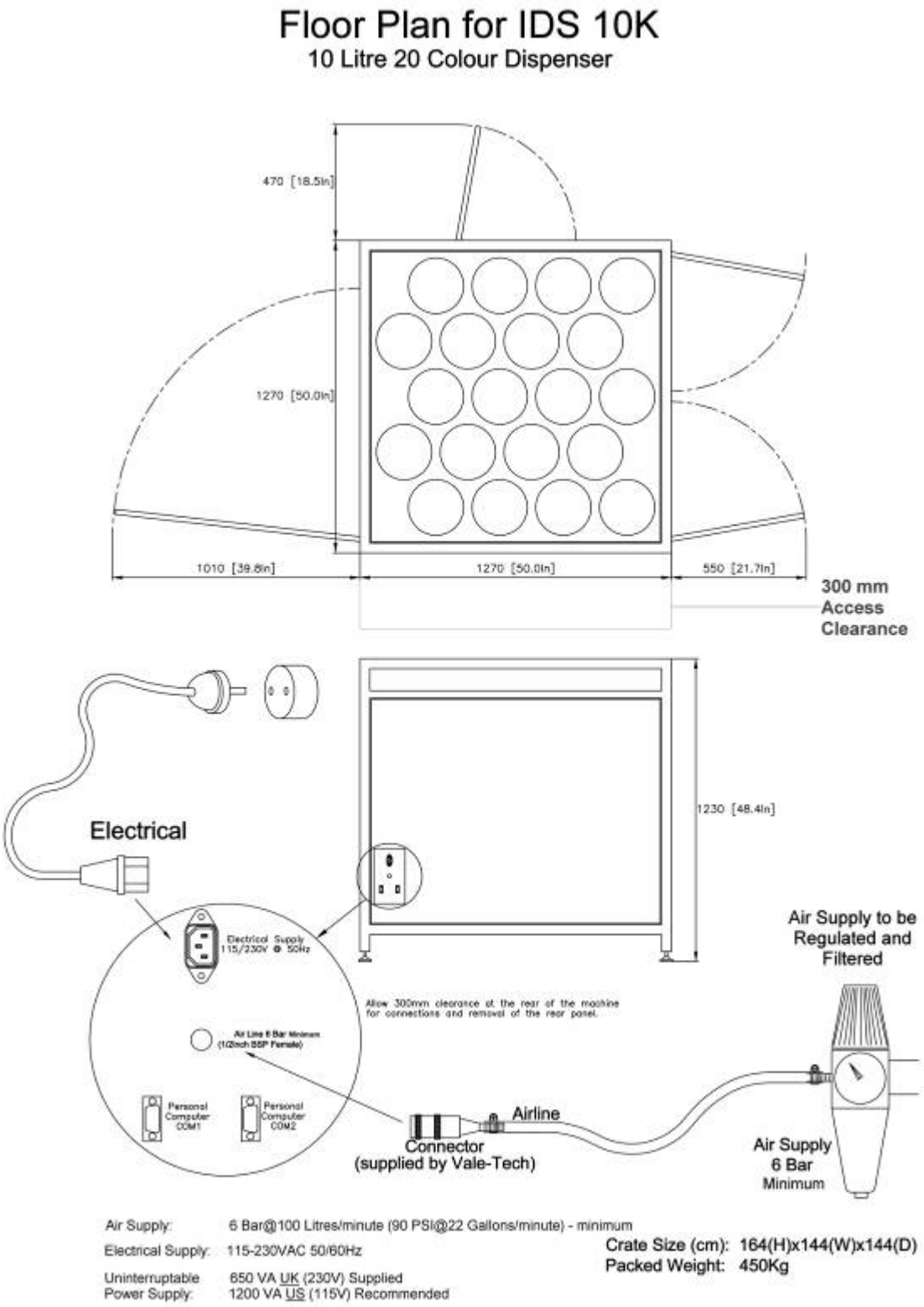
Contents

USER MANUAL

1 Installation

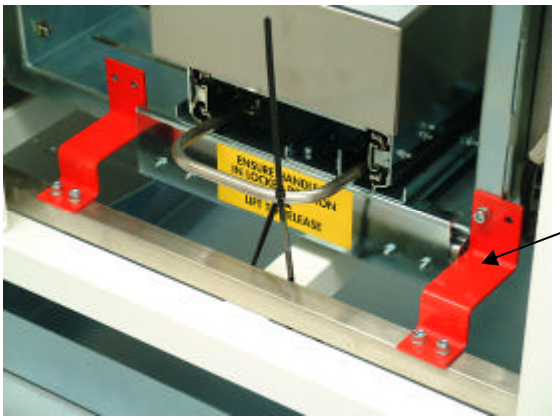
1.1 Pre-Install Information



1.2 Connection of Services

The IDS comprises one primary module, measuring 1.27m². It should be sited in its desired location by moving with a forklift or pallet truck, remembering to ensure there is a minimum of 300mm of clear space at the back of the machine for the connection of primary services to the machine.

After positioning the IDS ensure that all the feet are placed flat on the floor before leveling. Correct leveling of the IDS is achieved by placing a spirit level on all four corners and also across the frame. Adjustment to the height of the IDS is done by adjusting each of the corner feet up or down as necessary.
Note: Remove transit system before connecting power (see below).



Remove Red Transit Straps and Cut Cable Tie from Balance Handle

Connecting Electrical Supply

Connect mains electrical power rated at either 115V or 230V 50/60 Hz to the inlet power socket mains input. This is located on the rear of the machine to the right side (when facing the front of the IDS) and clearly indicated as POWER (see fig 1)

1.3 Connecting Air Supply

Connect an airline from an external filtered, clean, dry regulated air supply to the air input connector also located at the rear of the machine (see fig 1). The air is connected via the quick-fit air coupling (see below) supplied by Vale-Tech and requires 8mm hard walled hose for the push fitting. Alternatively, the air supply can also be fitted using soft wall hose and a Jubilee Clip
(Use Imp ½“ bore or Met 12.70mm, Imp ¾“ or Met 19/20mm o/d air hose).

Quick-fit Air Coupling

Fig 1.

1.4 Connecting the Monitor/Keyboard Mount

If the optional monitor/keyboard mount is supplied, this should be fixed to the top left front of the dispenser using the four M6 cross head screws supplied. Please note that the keyboard, monitor cable and power cable for the monitor are required to be first fed through the plastic cover on the front of the IDS frame before connection to the IDS bulkhead.

1.5 Connecting the PC

Connect the COM1 and COM2 cables to the appropriate serial Com ports on the back of the PC (refer to the configuration data in the service section). Now connect network, printer, scanner and telephone modem connections to the PC, if additionally required.

Note: Before powering on the PC Please ensure that the PC's PSU is set to the correct mains power voltage either 115V or 230V. Full range PSU's are auto switching, 115/230V.

1.6 Connecting the PC (externally)

If you are locating the PC some distance away from the IDS machine, Connect both the cables from COM1 and COM2 from the rear of the IDS (see fig 1) into the PC serial Com on the back of the PC (refer to the configuration data in the service section). Now connect network, printer, scanner and telephone modem connections to the PC, if additionally required.

Note: Before powering on the PC Please ensure that the PC's PSU is set to the correct mains power voltage either 115V or 230V. Full range PSU's are auto switching, 115/230V.

2 IDS Start-Up Procedure

2.1 Switching On IDS

Before switching on the PC or IDS machine, you need to make sure that at least four (4) of the Ink reservoirs (pots) initially have their air valves turned OFF on the lids. This procedure is to ensure that the IDS pressurizes equally and is able to quickly achieve it normal working pressure.

Now switch on the IDS by turning the mains ON/OFF Isolator switch CLOCKWISE on the lower right side of the machine to the ON position.
Now turn on the PC, open the front left hand side door panel and de-press the power button on the front of the PC. At this point, the red light on the IDS beacon will be illuminated and the alarm will be sounding.

2.2 Log-on and Dispenser Initialisation

Launch Ink Manager and then logon, (See Figures 1 and 2).
If there are no user accounts, have your system administrator create user accounts by logging on as 'administrator' (password supplied separately).

Figure 1.

Figure 2.

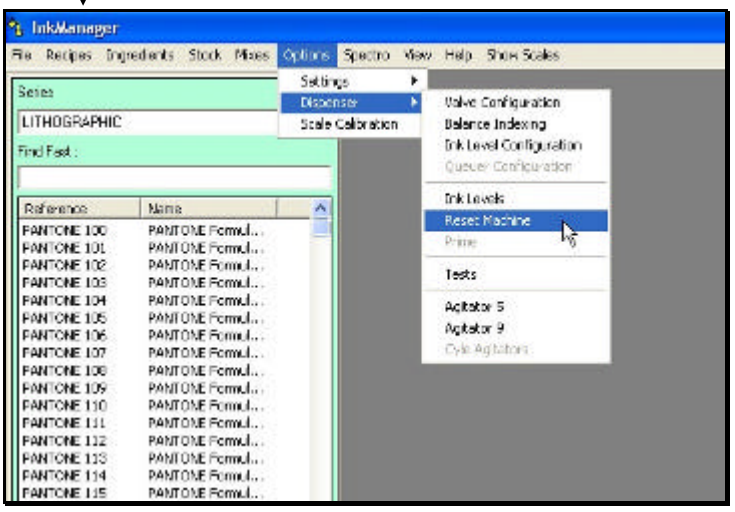


Figure 3.

After completing the above process the sounder should stop and the beacon will change from red, to green and amber. The balance will move to the home position and the air will switch on.
If the dispenser does not reset, check that the emergency stop is released.

Note: If the emergency-stop button is depressed, release it by turning the button clockwise. Ensure that you do not depress it further whilst turning it or the button will not release.

After the initial IDS pressurization, turn the remaining 4 blue air valves to the ON position and check for any minor air leaks.

2.3 IDS Beacon Warning Indicator

RED: Indicates Emergency Stop Switch activated or machine in initial Power ON state.

AMBER: Indicates the balance dispenser is moving.

GREEN AND AMBER: Indicates machine in RESET condition or ready to dispense.

GREEN: Indicates machine is in the process of dispensing ink.

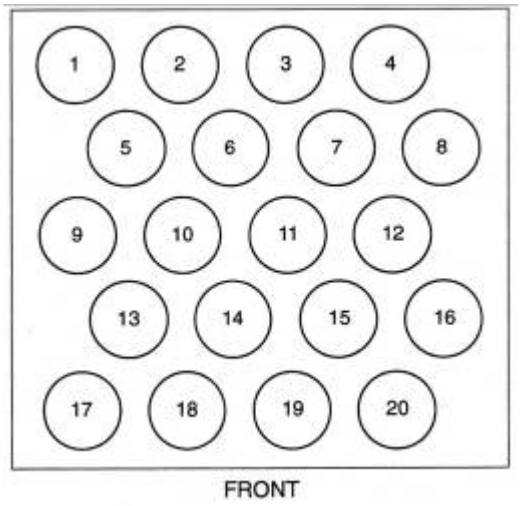
3 IDS Ink Set-Up

3.1 Setting Ink Names

WARNING: DO NOT FILL THE INK SUPPLY CONTAINERS WITH INK UNTIL THIS STAGE HAS BEEN COMPLETED!

First you need to allocate an ink name to each of the supply containers to be filled. You will also need to ensure that the corresponding ink is put into the correct container later on when re-filling commences. Now complete the Ink reference names in the space provided below.

Some machines may have a pre-determined list setting out which ink should be placed in which supply container. In this case, this information should be supplied in conjunction with this manual or obtained from the distribution agent.

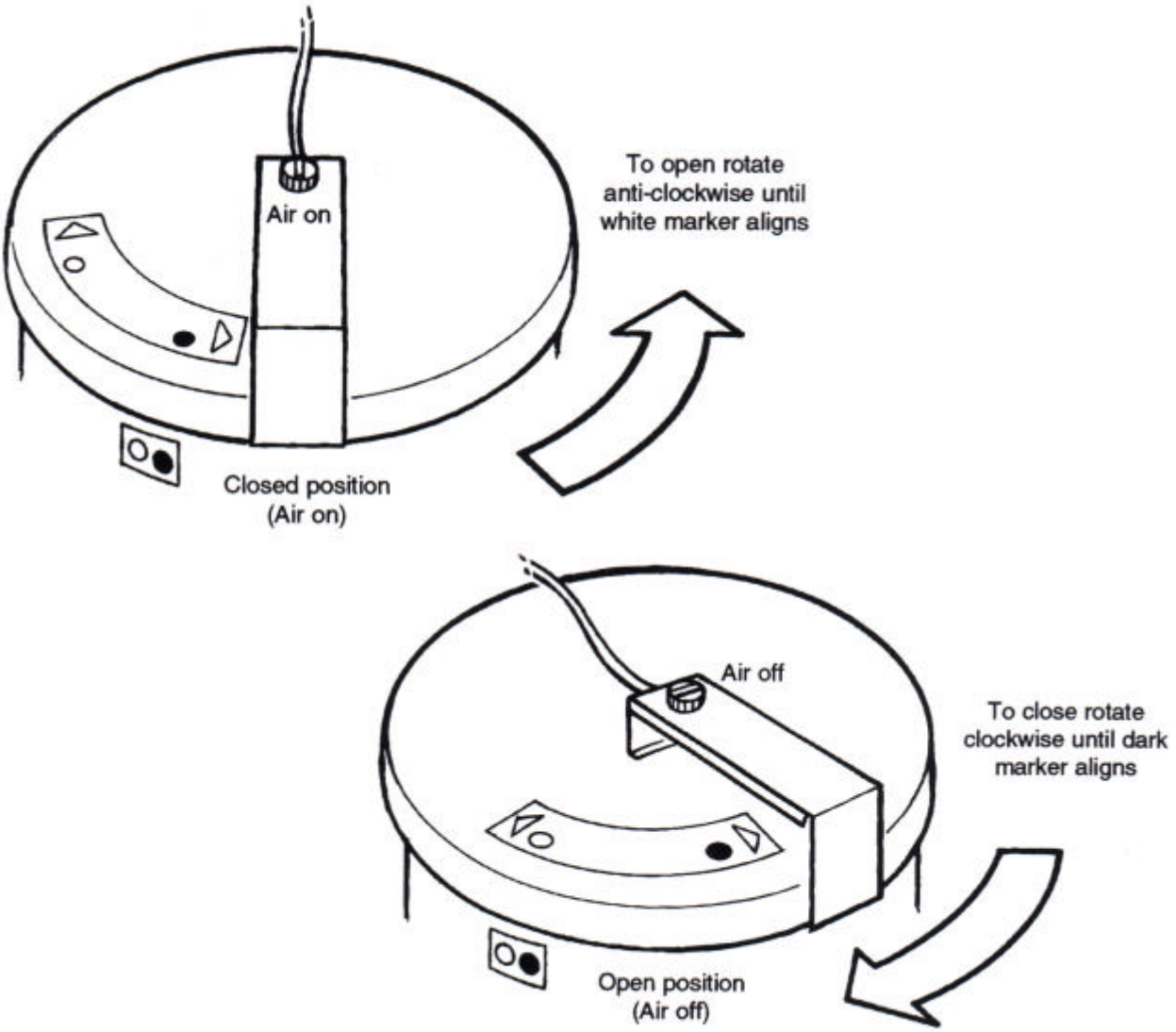


Container	Series/Reference/Colour
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	

3.2 Loading Ink

WARNING: NEVER TRY TO REMOVE A SUPPLY CONTAINER LID WHILST UNDER PRESSURE!

First turn the blue air valve on each container lid to the OFF position to allow all the containers to fully vent (de-pressurize). When the hissing sound of escaping air ceases fully, each handle will become easy to turn. Rotate each handle in an anti-clockwise direction until the white dot mark on the lid sticker fully lines up with the white dot mark on the body of the container. Then lift the lid clear. Each IDS is pressure tested using water prior to shipment and so any residue moisture should be fully removed before each container is filled with Ink. Before loading Ink it may be advisable to clean out the containers with an alcohol/isopropranol solution, taking care not to move or damage the probes attached to the side of the container.



If a lid becomes difficult to remove, ensure that the gasket on the underside of the container lid is clean and in good condition.

3.3 Setting Ink Levels

Ink level sensing is achieved by monitoring the levels in the individual containers using a probe mounted on the side of each container. The probe comprises 2 insulated steel rods spaced 20mm apart. One side is electrically isolated from the container.

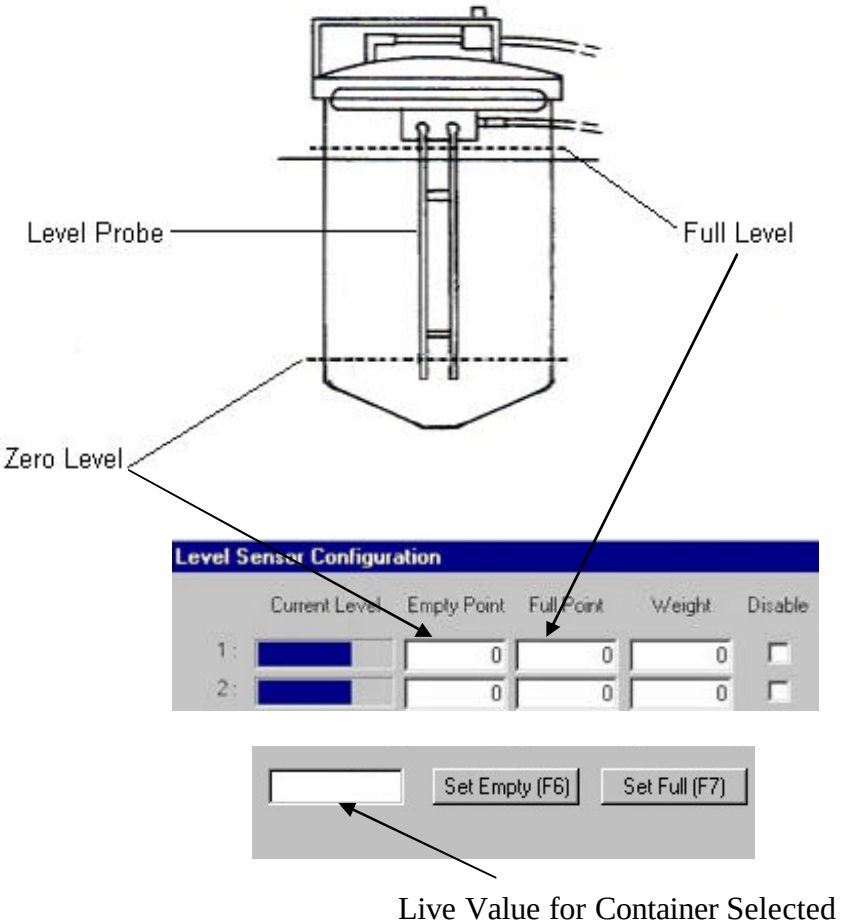
The probe is mounted vertically to the container, with the bottom of the probe as close to the bottom of the container as possible, but far enough away to prevent air being drawn into the supply container and pipe as the IDS dispenses. This ensures that the empty point registers prior to any air being drawn through to the dispense valve, therefore eliminating spitting from the valve when empty.

Select “Ink Level Configuration” from the “Dispenser” settings in “Options”. Click the mouse into the “Empty Point” field for container number 1.

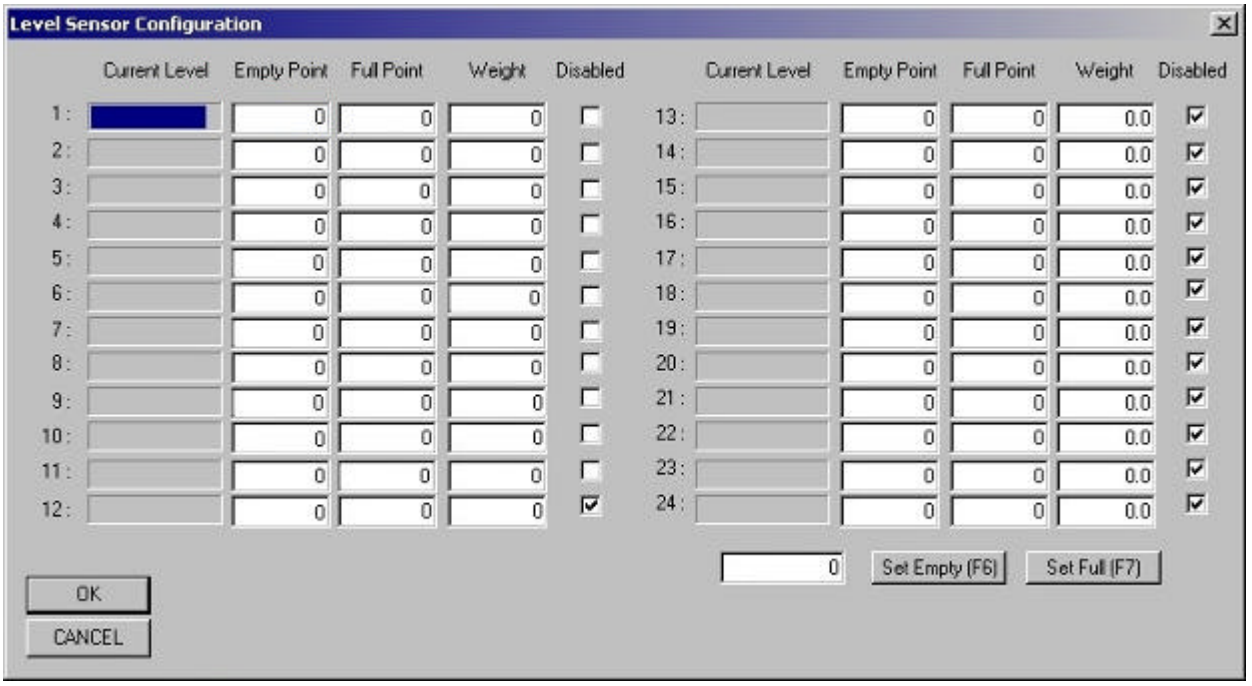
Note: The field in the final column labeled **Disabled** must be un-checked (enabled) for the container you are about to fill – only place a check in this box for the containers that you are not going to fill or are to remain temporarily unused.

Ensuring you are using the correct color ink, pour in enough Ink to cover approx 1”Inch (25mm) above the bottom of the probe in container 1.

Click on “Set Empty” to set the zero level for this color. This ensures that the container will show the empty point **BEFORE** the ink reaches the bottom, as previously explained.



Now continue to fill container 1 to a maximum level of 1/2” Inch (12mm) below the bend in the probe. When you have finished, press the tab key to move to the curser to the ‘Full Point’ field and press the “Set Full” button (the value entered for the full level should be **smaller** than the value of the original zero point level).



The “Weight” field is optional. If you know exactly how much ink you have used between empty and full, you can manually type in the known quantity at this stage. This will allow you to check how much ink, in weight, is in a particular container at any time.

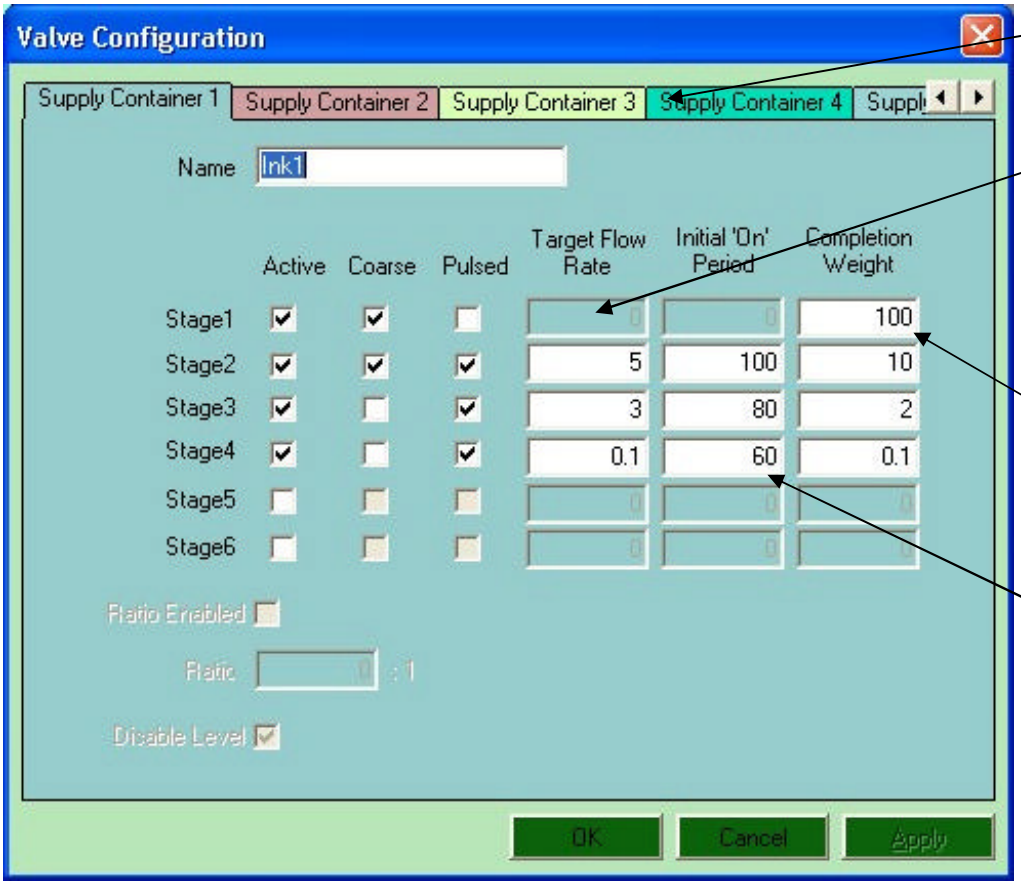
Note: The live value will be recorded into the selected container number (into either the full or empty points depending on which button is ‘clicked’). Therefore, if the ‘set full’ is clicked before the container is filled, this value will be stored as the full value. It is also possible to record the full value in the empty point cell.

3.4 Valve Configuration

Before starting to dispense Ink, the flow rates for each Ink need to be calculated individually in order to work out their required flow rates, it is necessary to understand also how the Inks viscosity range will affect its actual dispense rate through the IDS. From the "Options" menu, select "Dispenser" and then "Valve Configuration".

From the diagram below, you will see that there is a facility to split the dispense process into stages, for ease of control. There can be up to 6 separate stages of dispense, although they do not all have to be used. For the purpose of the example shown below, we are assuming a dispense of 200gms, utilizing only 4 of the stages.

Each container has its own "Folder tab", each must be allocated the correct colour reference as used in the ingredients for the colour series in use, in the "Name" field before the valves can be configured for their flow rates – please refer to the list in *Setting Ink Names*.



Folder tabs

The required speed of dispense when the valve is pulsing, in gms/second.

The weight remaining to be dispensed at which this stage ends.

The length of time (measured in milliseconds) that the valve is open when it begins to pulse.

3.4.1 What does pulsing do to the Valve during the dispense?

Pulsing is where the valve can be software controlled to initially open the valve for a pre-determined amount of time (in milliseconds) and then close the valve, thus causing a pulsing effect when the valve whether coarse or fine is opened for a short period of time before closing.
When pulsing is selected, both the target flow rate and initial pulse time are irrelevant and therefore become grayed-out.

If "Pulsed" is **NOT** selected by being checked (ticked), the valve will be then remain fully open with Ink flowing continuously from the coarse valve, until the dispensed amount of the ink has reached the correct dispense weight. Similarly, if "Coarse" is **NOT** checked then the flow rate will automatically dispense from the fine valve, until the dispensed amount of the ink has reached the correct dispense weight.
The previous example used 4 stages to complete the dispense, the break down of each dispense stage is as follows:

-With a Dispense Ink Quantity of 200g:

Stage 1.

- Is Active or enabled
- Coarse feed valve dispense
- From 200g down to the completion weight of 100g

(Total of 100g of Ink dispensed into the supply container)

Stage 2.

- Is Active or enabled
- Coarse feed valve will pulse (open for 150 milliseconds before closing) and dispense at a target flow rate of 5grams/second The target flow rate should be adjusted in increments of 10 if the target rate is difficult to achieve, if the dispense time is taking too long, for example.
- After First Stage 100g down to the new completion weight of 15g

(Total of 185g of Ink dispensed into the container)

Stage 3.

- Is Active or enabled
- Fine feed valve dispense
- After Second Stage 15g down to the new completion weight of 2g

(Total of 198g of Ink dispensed into the container)

Stage 4.

- Is Active or enabled
- Fine feed valve will pulse (open for 150 milliseconds before closing) and dispense at a target flow rate of 0.1grams/second
- After Third Stage 2g down to the new completion weight of 0g or Zero
- (Total of 200g of Ink dispensed into the container)

The example above utilized all four stages, and all were fully active or enabled. Each Stage can be individually enabled or disabled, by checking the tick box. When a Stage has been disabled the stage will become inactive during the dispense sequence. Therefore Inkmanager numerically performs each Stage until it finds a disabled Stage where it then stops.

WARNING: IF STAGE 1 IS DISABLED THEN THE IDS WILL NOT DISPENSE ANY OTHER STAGES!

The flow rate settings require to be entered for each individual ink supply container.

3.4.2 What happens if I put the same Ink in more than one of the ink supply containers?

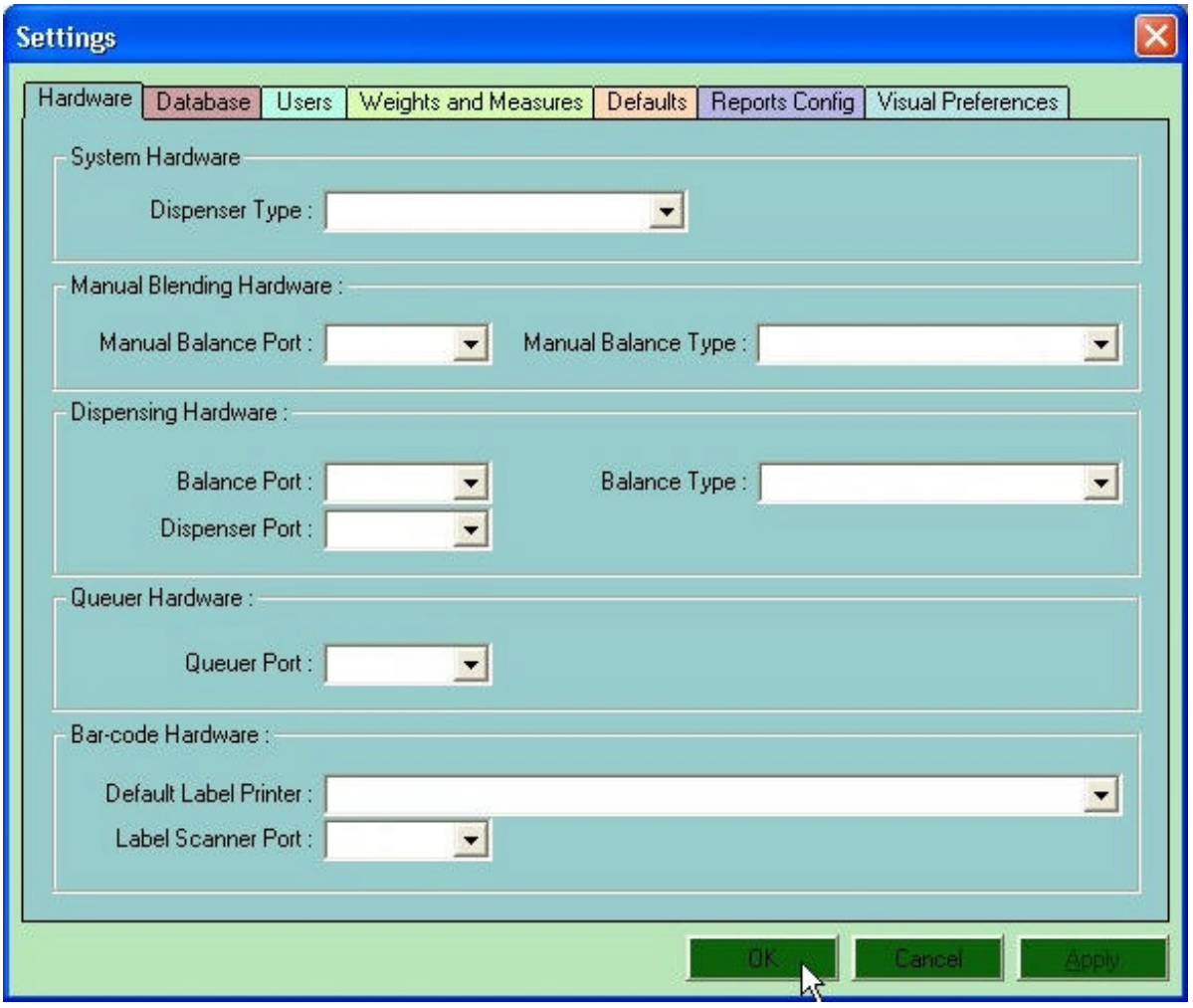
The IDS is designed to allow the operator to fill more than one of the supply containers with the same Ink, this is more commonly used for colors that are most frequently used in mixing i.e. Black and White or a Base
(A Blending or UV Curing Ink). In this case the Operator has to give the same name to both of the Folder Tabs when programming the Flow Rates (See section *Valve Configuration*).

The IDS will dispense from the one of the containers until the empty point is reached, if this was to happen in the middle of a dispense sequence, the IDS will automatically divert to the second Ink container and continue to complete the mix. A warning message in Inkmanager will inform the operator that the first container is empty. The IDS will now continue to use the second container until it is empty. When the second container reaches the empty level, the IDS will automatically switch back to the first container. By this time the operator should have re-filled the first container, (see Section *Loading Ink*).

4 Hardware Settings

Ink Manager will need to be set up to work with your particular machine and requirements. From "Options" at the top of the screen, choose either "Settings" (to set up the hardware configuration details, user details and general software defaults, etc…), or "Dispenser" (for setting ink levels, valve configurations etc.). For all settings other than 'Hardware', please refer to the Software Training Section.

If you press "Options" and choose "Settings", the following screen will appear.



Hardware – to tell the p.c. which ports the various items of hardware are connected into and which type of balance is being used. Please refer to the hardware Configuration Sheet in the Service section of this Manual for these settings.

Note: Hardware configuration settings should only be changed by authorized personnel/ engineers.

5 Machine Operation

Please refer to IDS Set-Up for power-up instructions.

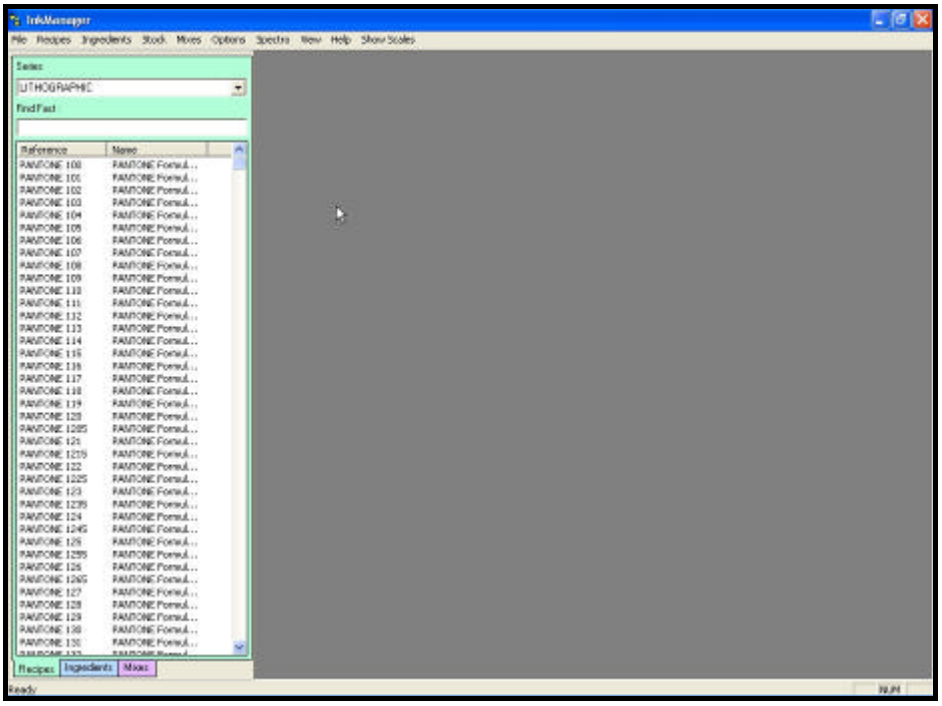
5.1 Log-On

Launch Ink Manager and then log on by entering your User Name and Password (see figures 1 and 2), which should have been set up previously by your system administrator.

Figure 1.

Figure 2.

If this is a first time start-up please re-set the machine by referring to the 'start up procedure' section of the manual.
After logging in, the following screen will appear.
Note: This is an example and the actual screen may differ slightly.



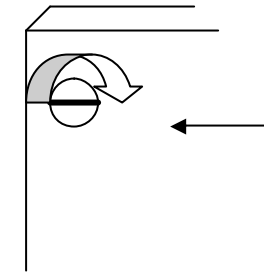
To perform a dispense or other Ink Manager Operation please refer to the Ink Manager Training Manual.

5.2 Safety Features of the IDS 1020

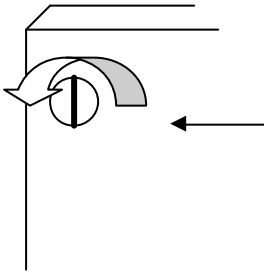
The IDS system incorporates safety features, which work to prevent any potential injury or harm to the user or to the machine.

5.2.1 Door Switches

2 Side (LHS) Door Switches.
Both must be closed before a dispense can take place.
The locks on the left hand side doors are operated as follows:



Using a flat screwdriver, push the door in and turn the screwdriver clockwise till it locks into place.



To unlock simply turn the screw anti-clockwise to release.

The front door also has a switch, which needs to be closed before a dispense can be carried out.

5.2.2 Emergency Stop Switch

Pressing the red button labelled ‘emergency stop’ at the front of the machine will activate the Emergency Stop.

To release the Emergency Stop you must turn the button anti-clockwise ensuring that you do not depress it further, preventing the button from releasing.
After an Emergency Stop a ‘Re-Set Machine’ is required to stop the sounder and before any further dispenses can be carried out.

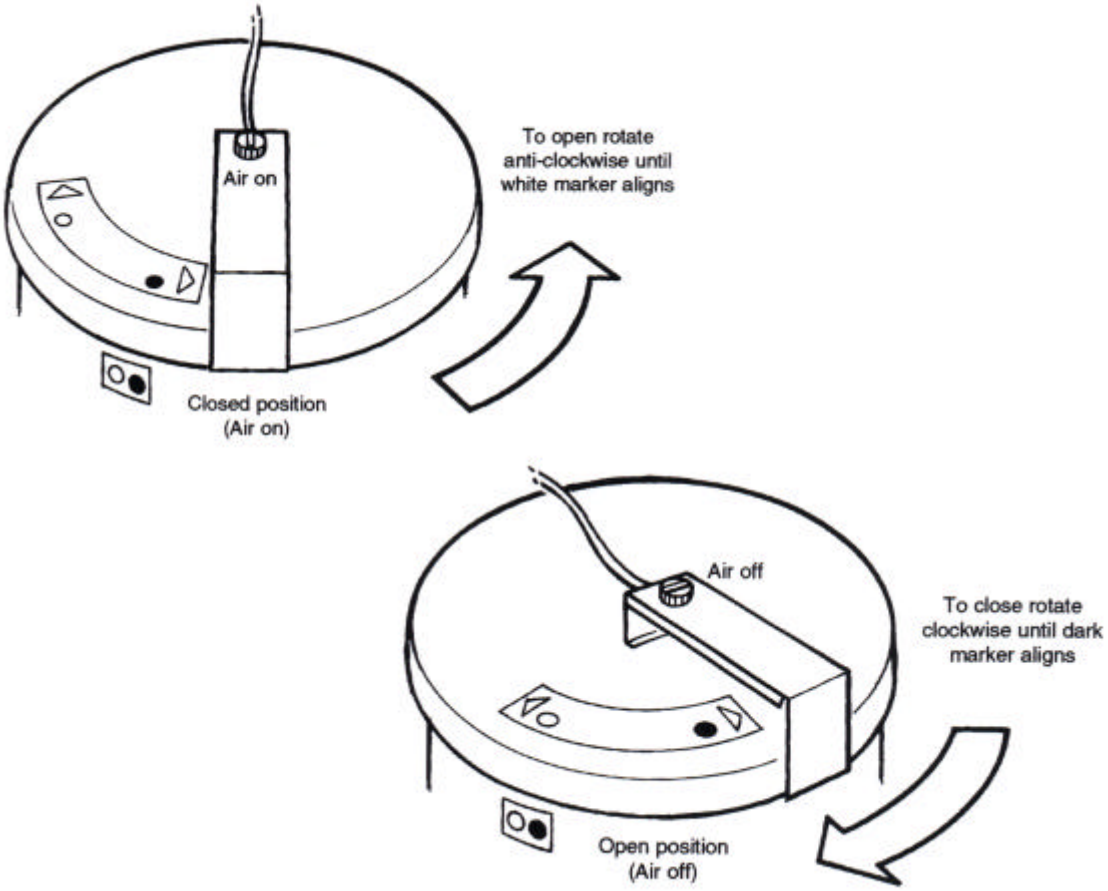
5.2.3 Sounder Adjustment

The sounder is an alarm that alerts the user to any problems that occur with the machine. This alarm can be adjusted via the volume setting within the sounder along with the tone pattern.
For adjustment of the sounder, a screw can be found at the back, by turning this either way the volume can be decreased or increased accordingly.

Note: It is important that before any adjustment is made, the User is reminded that the sounder is a safety feature that must be audible above the ambient noise of the workplace.

5.3 Operating the Ink Supply Container Lids

The supply container lid provides a pressure seal for the container via the gasket. To allow removal of the lid, first turn the blue air valve on each container lid to the OFF position to allow all the containers to fully vent (de-pressurize). When the hissing sound of escaping air ceases fully, each handle will become easy to turn. Rotate each handle in an anti-clockwise direction until the white dot mark on the lid sticker fully lines up with the white dot mark on the body of the container. Then lift the lid clear. To attach the lid simply place on top and rotate clockwise until the dark markers re-align.

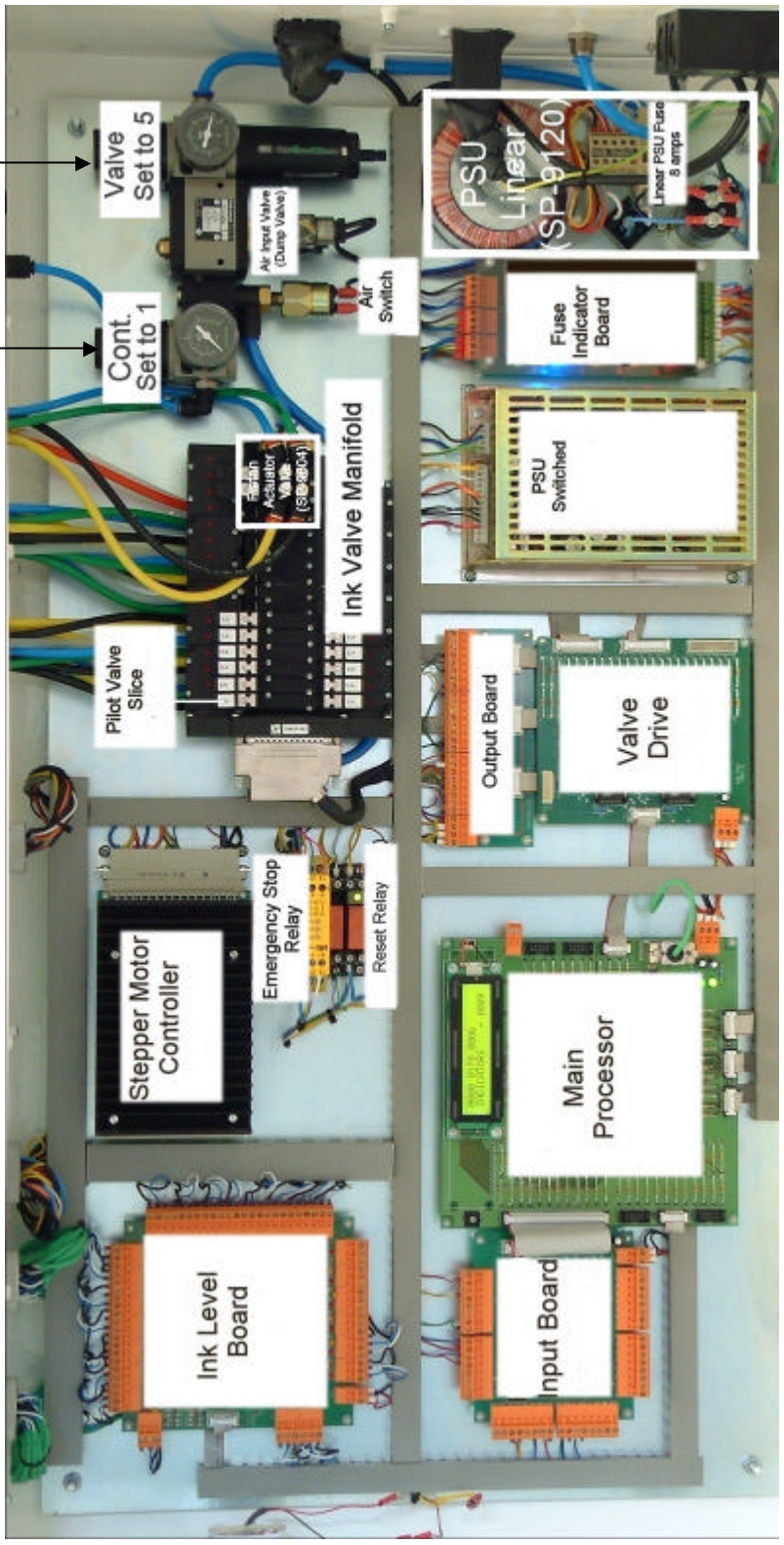


5.4 Supply Container and Valve Air Regulator Adjustment

The container and valve can be found in the main chassis as labelled along with the required settings.

Valve Set to 5 (PSI 72)

Container Pre-set to 1
This value is set on commissioning, for adjustment, refer to service log for details.



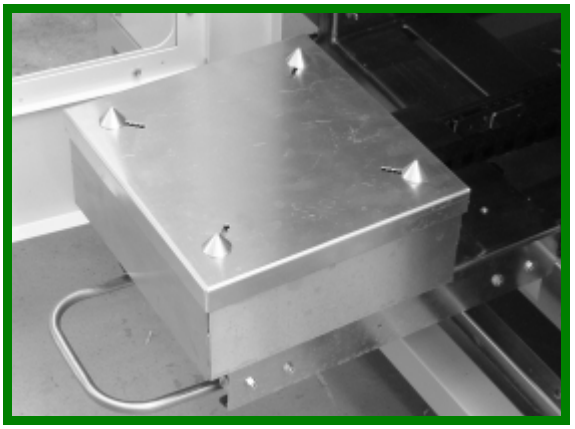
5.5 Using the Balance

Locator plates are required to ensure the container is positioned in the center of the balance, and secured firmly before the dispense process. They are manufactured to suit customer specific container dimensions, and are “keyed” to only fit firmly in one position. Please ensure you have the correct size locator plate for your blend container. Adjustments can be made by re-positioning the cones on the 1 US Gallon Locator Plate. All four must be symmetrical.

WARNING: DO NOT USE THE DISPENSER WITHOUT THE CORRECT SIZE LOCATOR PLATE FOR THE CONTAINER

Contact your supplier, or Vale-Tech Ltd direct, if you do not have the correct size locator plate for the IDS.

Open the front door of the IDS and lift UP the handle, pull the balance out SLOWLY.
Place the correct blend container onto the locator plate



1 US Gallon/5 Litre locator Plate

US Quart/1 Litres Locator Plate

Each IDS is supplied with container locator plates, for either container as shown above. Please specify the correct size container locator plates when re-ordering.

When the correct size container plate has been fitted, and a container is in place, lift UP the handle and SLOWLY push the balance back IN towards the machine. When in the home position, LOWER the handle until it locks into position. To ensure it is locked into the home position, with the handle down, GENTLY try to pull back OUT. If it is correctly locked into position it will remain locked in position.

Note: If the handle is not in the locked position the IDS will not dispense.

5.5.1 Overweigh Protection

Two Photoelectric sensors are mounted in position to scan across and through the container plate. These sensors detect that

1. A container is present
2. The size of the container

Either a 5 Litre / 1 Gallon / US Quart / 1 Litre Container.

Batch size limits can be programmed into Inkmanager software; this ensures a batch cannot be dispensed if it is of greater size than the capacity of the container currently being detected.

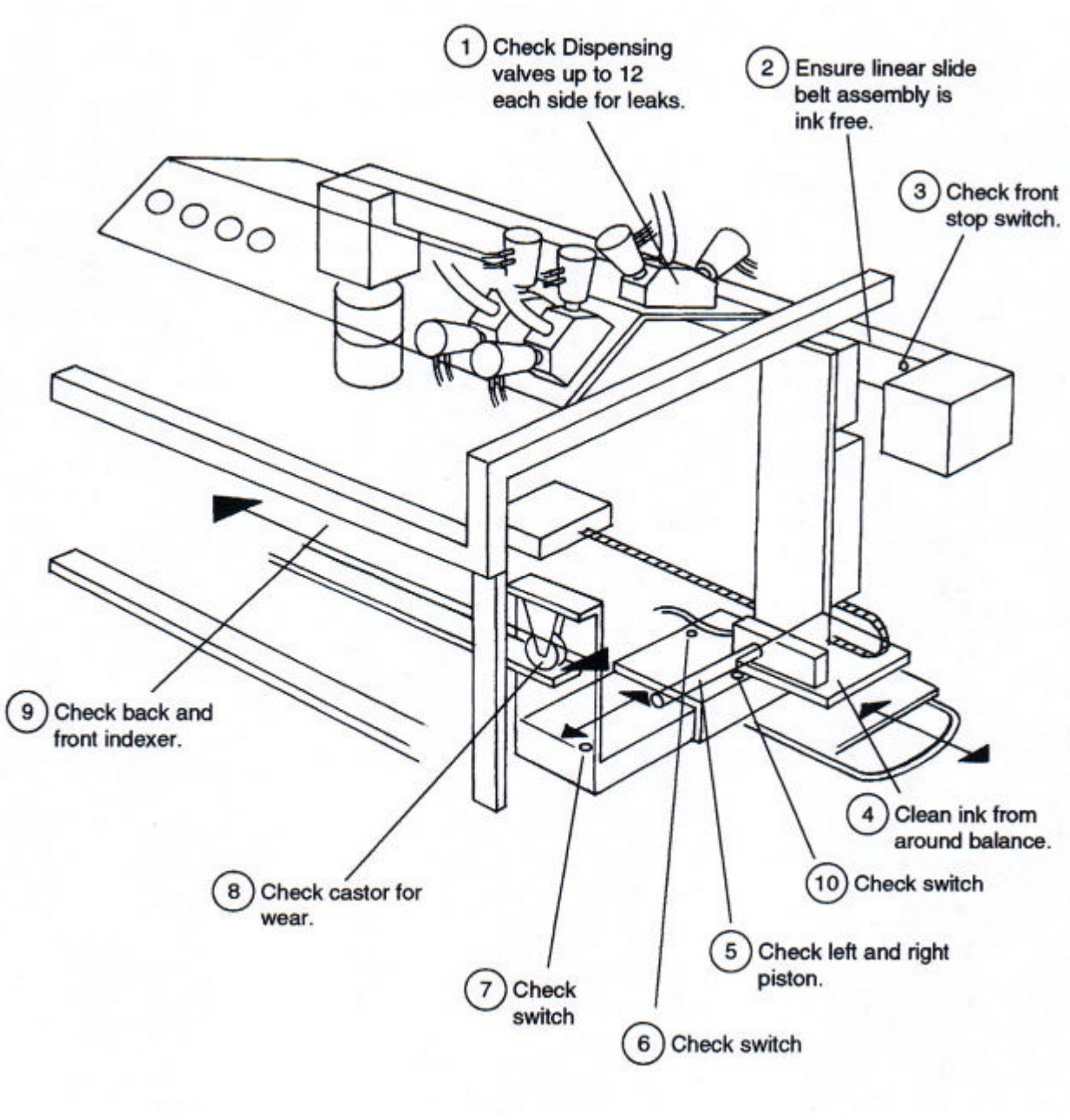
WARNING: THE IDS WILL NOT DISPENSE WHEN NO CONTAINER IS DETECTED!

A warning will be shown on the screen giving the operator the following choice:

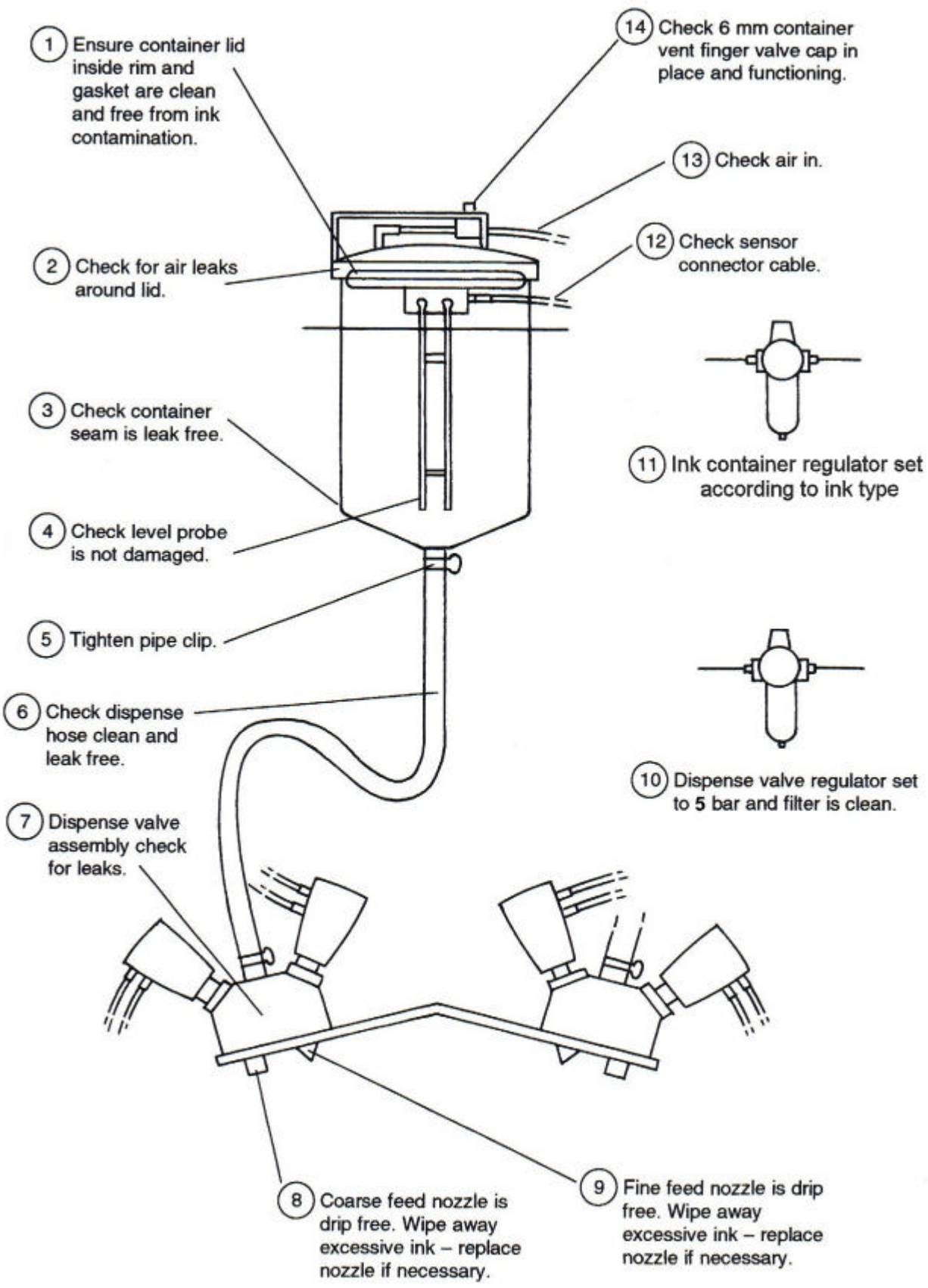
a) Please reduce the batch size
b) Please increase the container size

6 Cleaning & Maintenance

6.1 Dispense Valve Assembly



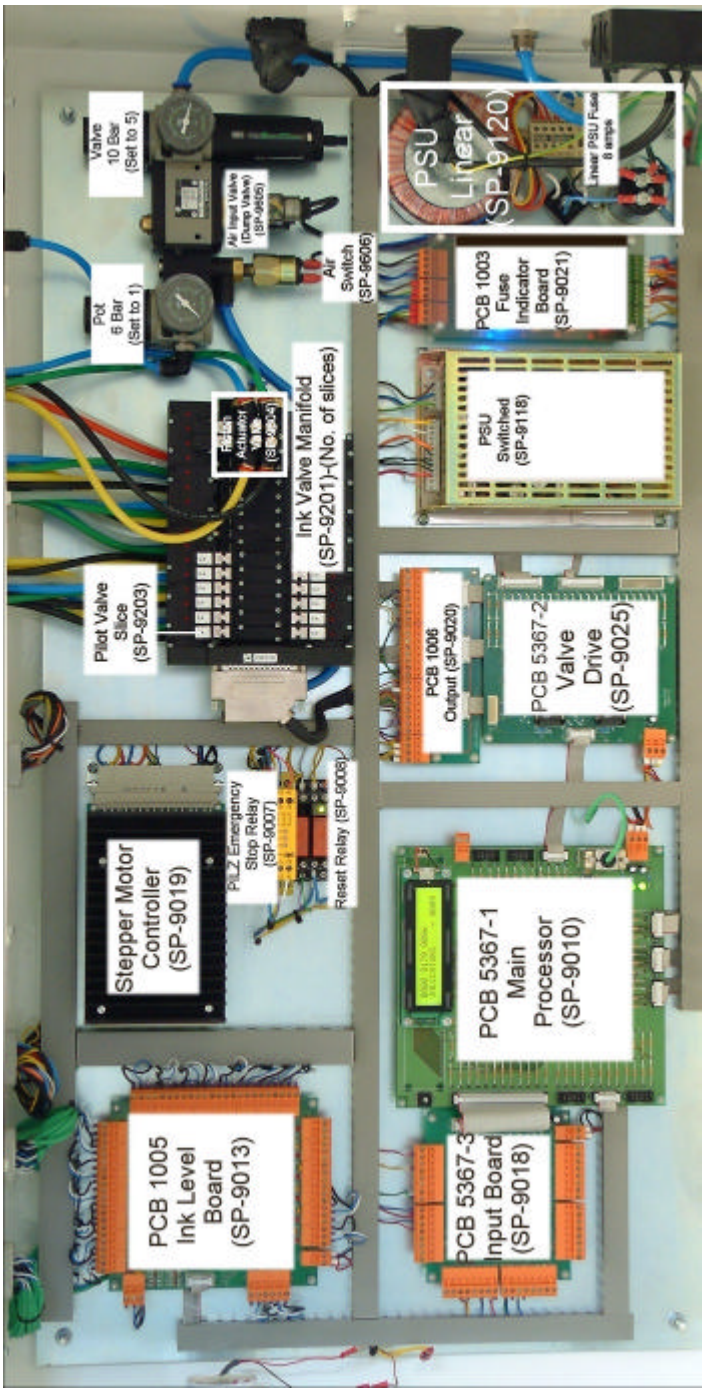
6.2 Ink Supply Container & Valve



SERVICE MANUAL

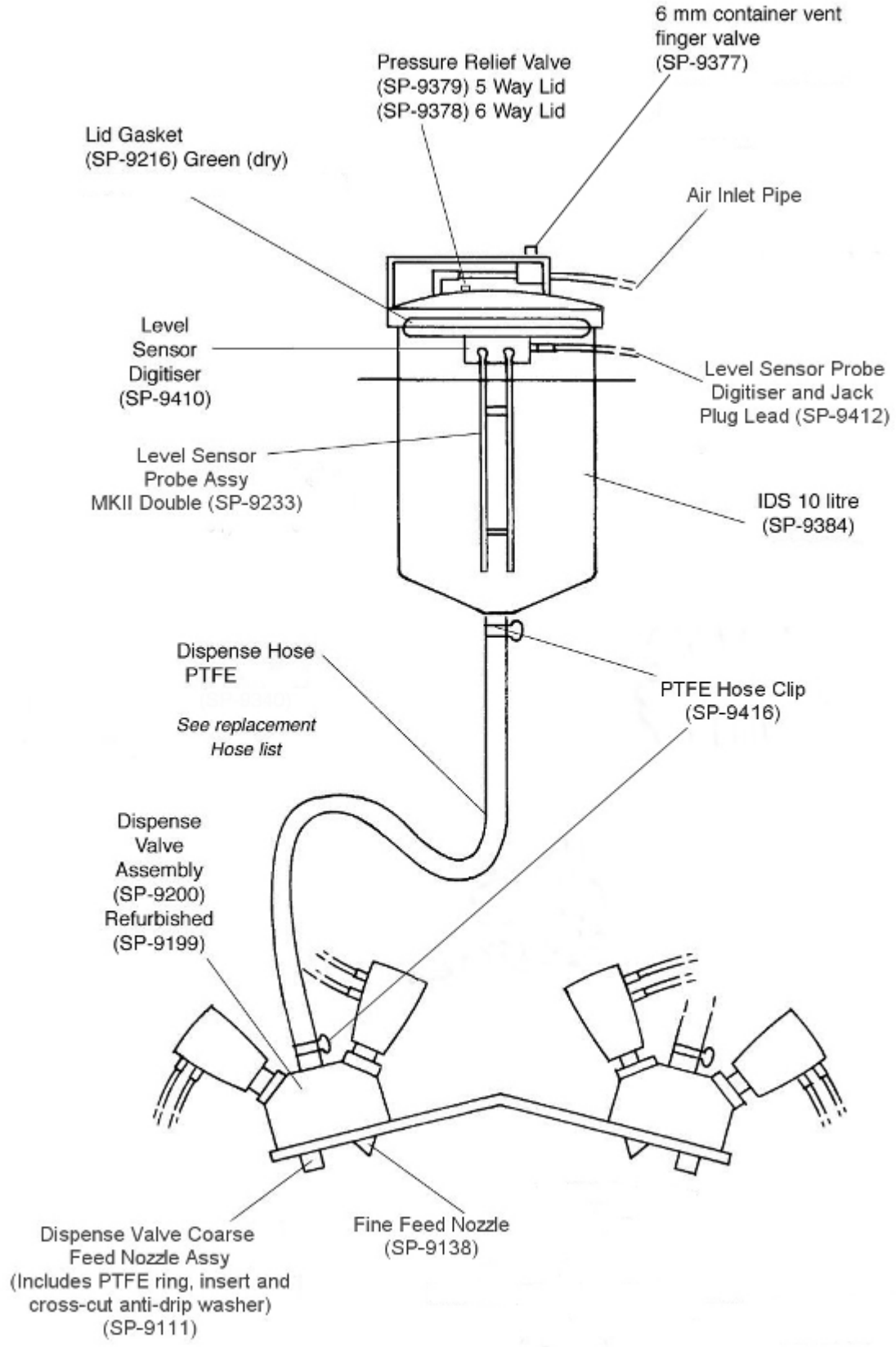
7 Spare Parts

7.1 Pneumatics and Electronics IDS 1020

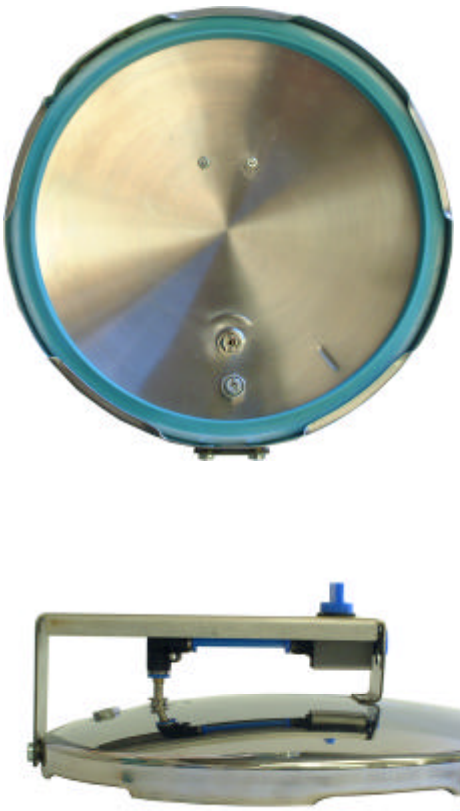


Keyboard Cover Cherry Trackerball- (SP-9038)
Cherry Trackerball Keyboard (SP-9036)

7.2 Ink Supply Container and Valve IDS 1020



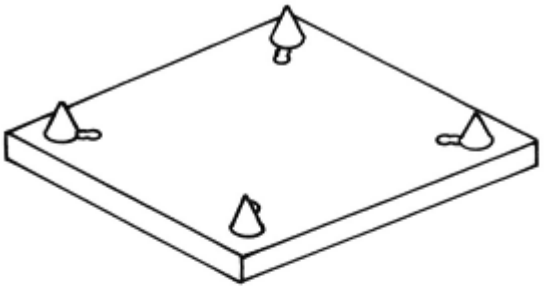
7.3 Ink Supply Container Lid Identification



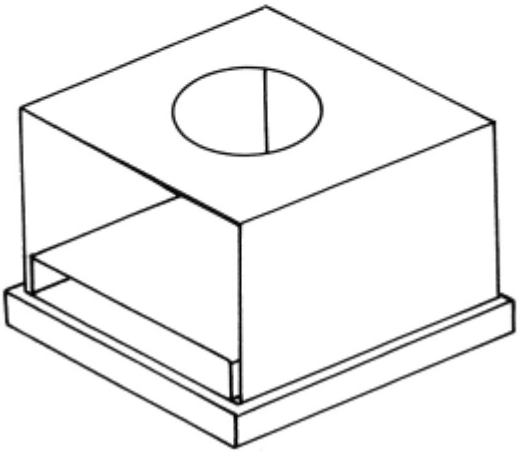
5-Way Lid (SP-9397)

6-Way Lid (SP-9398)

7.4 Blend Container Locator Plates

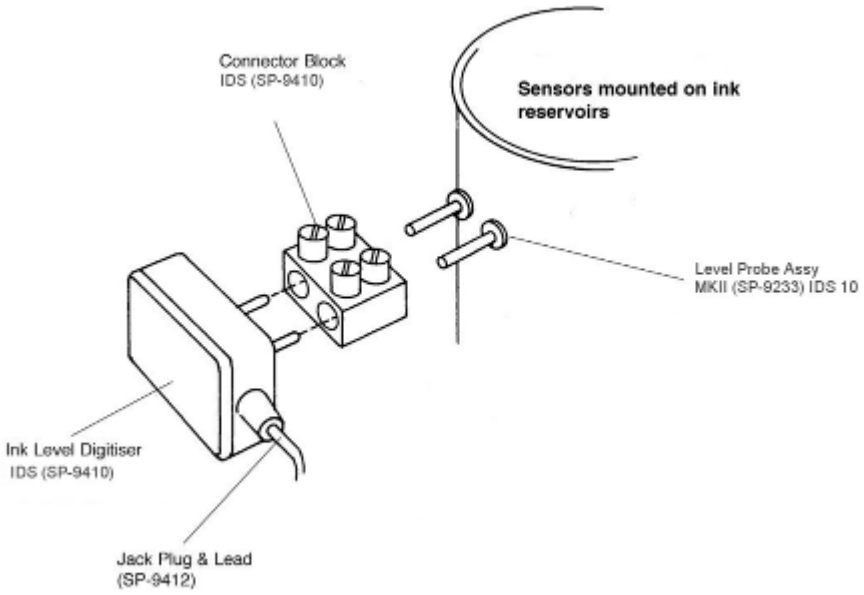


1 US Gallon Locator Plate (SP-9362) or 5 Litre Locator Plate (SP-9362)

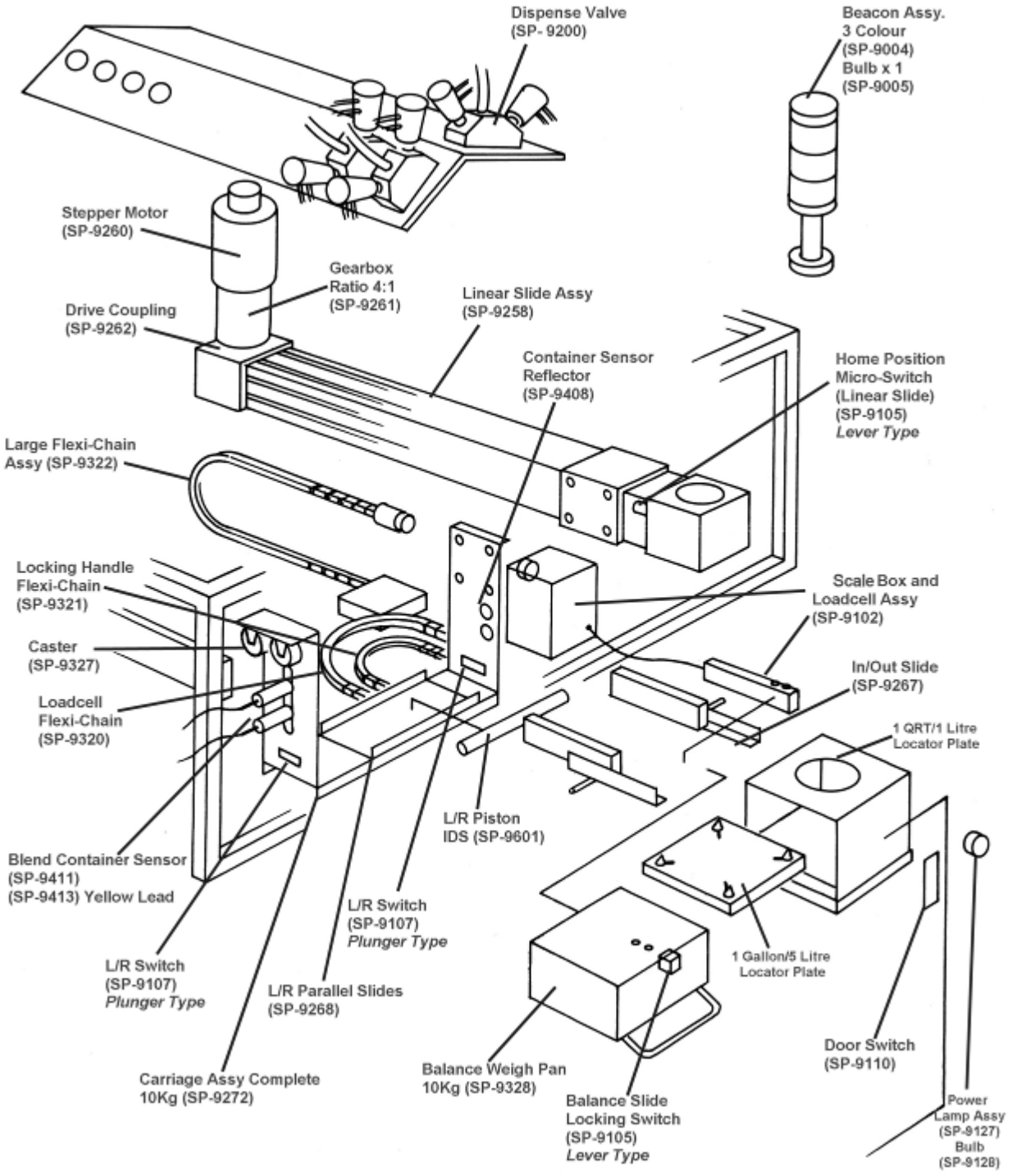


1 US Quart Locator Plate (SP-9363) or 1 Litre Locator Plate (SP-9364)

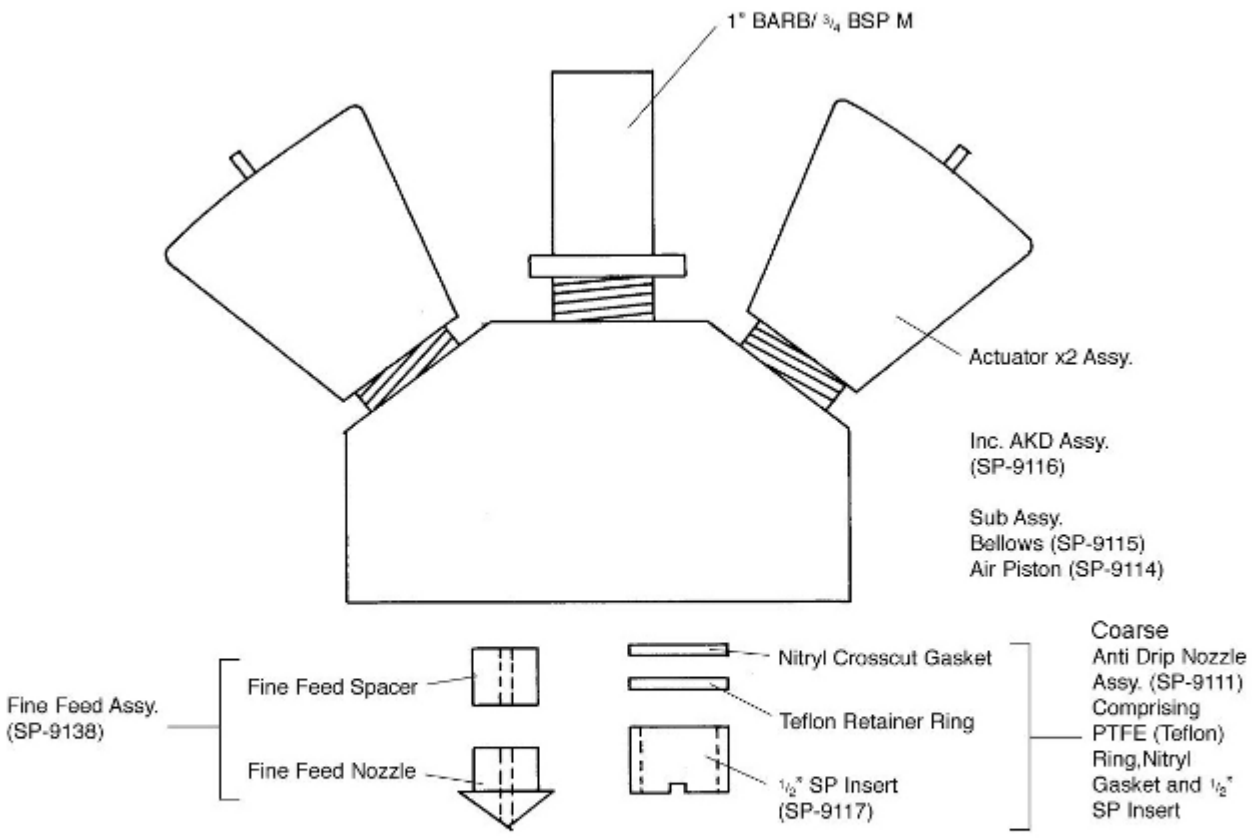
7.5 Ink Level Sensors



7.6 Balance Assembly IDS 1020



7.7 Dispense Valve (SP-9200)



VALE-TECH Spare Parts Guide July 2003

IDS1020

GENERAL PARTS LIST

Item	Description	Part Number
1	Beacon 3 color assembly	SP-9004
2	Beacon bulb	SP-9005
3	Emergency stop relay (Pilz)	SP-9007
4	Reset relay	SP-9008
5	Main processor (controller) board	SP-9010
6	Ink level controller with LEDs (PCB 1005-2)	SP-9014
7	Input board (PCB 5367-3)	SP-9018
8	Stepper motor controller	SP-9019
9	Output board (PCB 1006-1)	SP-9020
10	Valve drive board (PCB 5367-2)	SP-9025
11	Keyboard cover cherry trackerball	SP-9038
12	Cherry tracker ball keyboard	SP-9036
13	Balance assembly - 10kg board mk2 + Loadcell	SP-9102
14	Balance home switch (linear slide)	SP-9105
15	Balance left/right stop switch (lever) x 2	SP-9106
16	Balance left/right stop switch (plunger) x 2	SP-9107
17	Balance lock switch (lever)	SP-9109
18	Magnetic door switch	SP-9110
19	Valve coarse anti drip nozzle (10) used on SP9200	SP-9111
20	Power supply - switched	SP-9118
21	Power supply-Linear (Kit)	SP-9120
22	Fuse 20mm 8amp (pack10)	SP-9125
23	Fuse 20mm 5amp (pack10)	SP-9126
24	Power lamp assembly, green	SP-9127
25	Power lamp bulb	SP-9128
26	Dispense valve double actuator (refurbished)	SP-9199
27	Dispense valve double actuator	SP-9200
28	Pilot solenoid valve (Fest) x 2	SP-9201
29	Pilot solenoid valve (Burk)	SP-9202
30	Lid gasket green non lubricated (pack10)	SP-9216
31	Level probe assembly -10 litres (mk 2)	SP-9233

32	Stepper motor type34	SP-9260
33	Stepper drive gearbox 4:1	SP-9261
34	Drive coupling, standard	SP-9262
35	Balance outfeed parallel slides	SP-9267
36	Balance left/right index parallel slides	SP-9268
37	Balance carriage assembly, 10kg complete	SP-9272
38	Balance flexi chain assembly	SP-9322
39	10kg load cell, inter connect	SP-9324
40	Balance carriage castor	SP-9327
41	Balance weigh pan and lock assembly, 10kg	SP-9328
42	Butyl hose, 2 metres	SP-9340
43	Locator plate 1 us gallon	SP-9362
44	Locator plate 1 us quart	SP-9363
45	Locator plate 1 litre	SP-9364
46	Locator plate 5 litre	SP-9365
47	Container vent valve, 6mm	SP-9377
48	Lid pressure relief valve (6way) (mk2)	SP-9378
49	Lid pressure relief valve (5way)	SP-9379
50	Ink supply container, 10 litres complete	SP-9384
51	Ink container sensor (9411) reflector	SP-9408
52	Ink level digitiser 10-20-25	SP-9410
53	Ink (blend) container sensor	SP-9411
54	Level sensor digitiser jack plug and lead	SP-9412
55	Butyl hose clip	SP-9415
56	PTFE hose clip 1"	SP-9416
57	PTFE hose set - complete	SP-9441
58	PTFE hose convoluted low pressure pot 1 – 520mm	SP-9421
59	PTFE hose convoluted low pressure pot 2 – 520mm	SP-9421
60	PTFE hose convoluted low pressure pot 3 – 435mm	SP-9423
61	PTFE hose convoluted low pressure pot 4 – 575mm	SP-9424
62	PTFE hose convoluted low pressure pot 5 – 395mm	SP-9425
63	PTFE hose convoluted low pressure pot 6 – 435mm	SP-9423
64	PTFE hose convoluted low pressure pot 7 – 395mm	SP-9425
65	PTFE hose convoluted low pressure pot 8 – 620mm	SP-9428
66	PTFE hose convoluted low pressure pot 9 – 450mm	SP-9429
67	PTFE hose convoluted low pressure pot 10 – 395mm	SP-9425

68	PTFE hose convoluted low pressure pot 11 – 300mm	SP-9431
69	PTFE hose convoluted low pressure pot 12 – 450mm	SP-9429
70	PTFE hose convoluted low pressure pot 13 – 310mm	SP-9433
71	PTFE hose convoluted low pressure pot 14 – 310mm	SP-9433
72	PTFE hose convoluted low pressure pot 15 – 320mm	SP-9435
73	PTFE hose convoluted low pressure pot 16 – 520mm	SP-9421
74	PTFE hose convoluted low pressure pot 17 – 435mm	SP-9423
75	PTFE hose convoluted low pressure pot 18 – 300mm	SP-9431
76	PTFE hose convoluted low pressure pot 19 – 300mm	SP-9431
77	PTFE hose convoluted low pressure pot 20 – 410mm	SP-9440
78	Piston L/R 25mm x 200 assembly	SP-9601
79	Piston actuator valve assembly	SP-9604
80	Air input valve assembly (Dump Valve)	SP-9605
81	Air switch (adjustable)	SP-9606
82	Linear slide assembly, RHS	SP-9258

7.8 Preventative Maintenance Programme

Item	Description	Action	Frequency
1	Balance assembly	Check: Parallel sliders for free movement Handle locking mechanism and locking switch Balance calibration Excessive ink on balance & carriage Locator plates are clean & undamaged Container sensors are functioning	Monthly
2	Dispense valves	Check: Coarse feed nozzle for excessive dripping Ink leakage from valve seals Hose clamps and hose fittings Flow rate configuration	Weekly
3	Main drive	Check linear drive belt and carriage for wear and tear	Monthly
4	Primary air regulator	Clean filter and check air pressure is set to min. 5 bar	Weekly
5	Dispense valve air regulator	Clean filter, ensure air pressure is set at 1 bar	Weekly

A. Pressurised Ink Containers

1		Check: Air settings to ink supply containers and adjust as required Lid seal gaskets and ‘O’ rings and clean/replace as required Ink supply container vent valves for damage or air leaks	Weekly

B. Final Assessment

1		Check machine for cleanliness and for mechanical integrity	Weekly
2		Check and report any mechanical damage or signs of misuse	Weekly
3		Check safety switches on doors and emergency stop buttons are functioning correctly. IF YOU ARE IN ANY DOUBT, DO NOT USE THE MACHINE UNTIL A VALE-TECH OR AN AUTHORISED SERVICE AGENT HAS CLEARED THE MACHINE FOR USE.	Daily

8 Trouble-shooting Guide

8.1 Common Problems.

PC not coming on/booting:		
IDS power is on but no light on at front of PC.	No Power.	Press 'Soft On' Power button at front of PC. If LED still not on, check Power Supply Switch at back of PC is on, press 'Soft On'. Check Power cable is secure, press 'Soft On'
PC LED is on but no display.	No Display LED. Display LED is on. Display LED is amber or red.	Check Monitor is switched on, press button on front of display. Check Monitor cable at back of PC is secure/plugged in, turn monitor off then on again. Display is stuck in power save mode, turn monitor off then on again.
PC not getting into windows.	Reports invalid system disk. Reports Keyboard error. Error message: Hard Disk or Boot device. Registry device/files error message. Hangs loading Windows, no error message displayed. PC still not getting into Windows.	Check for floppy disk in drive, remove and re-boot. Ensure keyboard is secure/plugged in then re-boot. Hard disk fault, call Support. Call Support. Re-boot with 'Ctrl+Alt+Del' keys or switch PC off, then on again. Call Support.
Monitor screen has turned dark but PC is switched on.	Monitor appears to be broken or switched off	Check monitor power is switched on. Check monitor is not in power-save mode by pressing a mouse button or keyboard space bar.
Machine does not work at all.	No power to PC or machine. Machine appears to be dead.	Check mains power to machine. Check machines Isolator switch is ON. Check PC is switched ON.

IDS Dispense Problems:		
Slow dispense.	Low/no air pressure.	Check air pressure regulators with containers turned off, Valve = 5bar, Pot = 1bar, if low check air supply is good first, then adjust gauges to specified pressures.
	Air pressure stays low after pots are turned on.	Check for air leaks.
	Air leaks at supply container.	Check and clean gaskets and lids, all sealing surfaces must be clear of ink or contaminants. Check Lid is securely closed. Check 'air in' lines are secure, push firmly into container vent finger valves. Require engineer adjustment or replacement.
	Air leaks from lid fittings.	Check lid is closed and air is turned on.
	No air pressure in pot.	Turn all pots off, then turn each pot on individually allowing each pot to pressurise before next is turned on.
	Pots not pressurising fast enough because low pressure is used.	Check flow rates set in dispenser Setup have not been set too low
	No apparent air leaks.	
IDS will not reset.	Beacon light flashes from green to red.	
	Door switch active.	Close any doors with sensor switches.
	Emergency Stop activated.	Release Emergency Stop switch.
	All doors are closed.	Faulty switch, call Support.
Ink Levels are wrong.	The ink level sensors are not reading or are reading incorrectly.	Ensure Digitisers on containers are fully plugged in and working properly.
	They appear to be reading either full or empty when they appear to be neither.	Check Min. & Max. Levels have been set in Ink Manager. Service personnel to ensure that the Ink Level sensor input PCB dip switch settings are correctly configured.
Balance errors.	There is no weight output or the weight shown is incorrect.	Check the calibration of the machine, if necessary, recalibrate. Check settings in ink manager are the same as settings in the Hardware Configuration sheet.

Balance carriageway will not move.	Machine resets ok but balance carriageway will not move.	Check side and front doors are all securely closed. Service personnel to check 5/8 Stepper Motor Driver Board protection fuse located on Electrical Chassis.
Green Mains power indicator bulb is no longer lit on the front panel.	Green Mains power is no longer lit on the front panel of the machine.	Service personnel to check the mains power supply bulb has not blown, fit a replacement if necessary.
One or more of the Beacon Red/Amber/Green bulbs are no longer lit.	One or more of the Beacon bulbs are not at all lit during the normal operating cycle of the machine.	Service personnel to check each of the Beacon bulbs have not blown, fit replacements if necessary.
Warning message 'Feed rate too slow' always appears during a dispense.	Machine will not dispense ink from valves.	Check Main Air Supply is on. Check the lid of the ink container is correctly fitted and the air tap is turned to the ON position. Service personnel to check Air regulator settings are correct inside Electrical Chassis.

My machine problem is not listed here, what do I do now…?	A Comprehensive list of **Technical Bulletin Guides** Have been produced to help **you** to resolve the problem. These are available from Vale-Tech	Contact your Authorised local Service Agent or contact Vale-Tech Ltd direct on: Office: +44 (0) 1638 668593 Fax: +44 (0) 1638 676720 Email: technical.support@vale-tech.co.uk

9 PC Hardware Configuration

The following information is recorded during the final quality control checks and reflects the PC configuration prior to shipping. Any changes made to the configuration after this may not be recorded. This record may provide essential information in restoring system operation in the event of system failure. Please do not remove it from this folder.

10 Ink Manager Hardware Configuration

The following information is recorded during the final quality control checks and reflects the Ink Manager Hardware configuration prior to shipping. Any changes made to the configuration after this may not be recorded. This record may provide essential information in restoring system operation in the event of system failure. Please do not remove it from this folder.

11 Drawings

The following drawings are provided for use by plant engineers/authorised service engineers to assist in the servicing of the IDS and for diagnostic purposes.

IDS 10K INK LEVEL CONTROL BOARD INFORMATION
Ink Level Sensor Control Electronics

IDS 10K INPUT BOARD INFORMATION
Provides Control Voltages, Beacon, Valve, Stepper Motor etc…

IDS 10K OUTPUT BOARD
Provides Input Sensing for Door Switches, Emergency Stop, Relays etc…

IDSED 001 SYSTEM WIRING
Block Diagram System Wiring Overview

IDSED 004 FLEXI LEAD
Flexi-Chain to Balance-Box Wiring Diagram

IDSED 005 LEAD 3
Blend Container Sensor Wiring

IDSED 006 LEAD 4
Wiring from Handle Switches to Balance-Box

IDSED 007 ELECTRICAL CHASSIS LAYOUT V9
Wiring Diagram for Main Chassis and Gland Plate Connector no. 3

IDSED 009 CHASSIS CIRCUIT
Circuit Diagram for Main Chassis

IDSED 010 LEAD 1

IDSED 011 LEAD 2

IDSED 012 PNEUMATIC CHASSIS LAYOUT
Pneumatics Piping Diagram for Main Chassis

TRAINING MANUAL

12 Ink Manager Software

The Ink Manager Software Training Manual that follows will provide you with the information you need to use all the advanced functions and features, along with basic instructions necessary for simple operation of the software. It can also act as a complete package for structured on-site training.

SERVICE LOG

13 Information

This Service Log serves to provide contact information; should additional assistance be required please refer to the contact details supplied below. Forms available at the end of this section allow space for the service history of the machine to be recorded for future reference.

14 Contact Information

If you require any additional assistance or have any queries, please contact

Vale-TecH

Direct on:

Office: +44 (0) 1638 668593

Fax: +44 (0) 1638 676720

Email: technical.support@vale-tech.co.uk

Alternatively, please visit our website at www.vale-tech.co.uk

Mail Address:

VALE-TECH LIMITED
Unit 12
Depot Road
Newmarket
Suffolk
CB7 OAL
UK

15 Service History

15.1 Machine Fault/Maintenance Log

Date	Action Taken	Signed

Date	Action Taken	Signed