

**A4
Automatic**

**Dispenser
User's Manual**

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Warning Labels:



Electrical Shock Danger! Cut off power supply before cleaning and maintenance.



Important Information! Read carefully.

1. Usage Requirements

- 1) Verify the local voltage/frequency is same as listed on the nameplate of the motor. For safety, make sure that all sockets are well grounded.
- 2) Environment temperature: 5°C-40°C, relative humidity: 15-90;
- 3) The appropriate atmospheric pressure range of working condition: 86kPa~106kPa
- 4) Computer Requirements:

1	CPU PIII
2	CD-ROM Driver
3	LCD 15" Screen Resolution: above 800X600
4	COM1 port
5	Windows 2000 XP Vista or higher Operating System(SP2)

2. Specifications

Type: A4 Spec: A416/14/12/10 Notes: Stirring time is optional on customers' requirements.

Items	Contents	Items	Contents
Number of Canisters	16/14/12/10	Min Dispensing	0.077ml (1Y/384)
Max Flow Rate	0. 60ltr/min	Canister Size	1.8/2.3/3.8 ltr
Pump Size	62mltr	Stirring Speed	20 Cycles/min
Power	≤200W	Power Supply	See Nameplate
Can Size(D x H)	MAX320mmX450mm MIN80mmX100mm	Stirring Time	Stir 10 minutes every 4 hours
Noise Level	<70dBA	Weight	182±3 kg
Machine Size (Height x Width x Depth)		1405X805X945 (mm)	

3. Safety Instructions

- 1) Please read this manual carefully before installation and operation.
- 2) All the operation and maintenance must be carried out by authorized personnel.
- 3) Lengthening wire is prohibited.
- 4) The machine is only compatible with 0.5 liter to 20 liter (40kg) paint cans.
- 5) So that stirring is available, the machine must always be powered on.
- 6) Close the side door first before closing the top cover.
- 7) If not used for an extended period of time, the canisters should be cleaned out and the A4 unplugged.
- 8) During transportation, the A4 should be leveled, upright, and handled delicately. The A4 should be kept in ventilated and dry room which meets fire standards.
- 9) Pressing the Emergency Stop Button will also stop colorant stirring.
- 10) The equipment is forbidden to be used in a flammable environment.
- 11) No data line hot plug.

4. Machine Composition



Figure 4.1

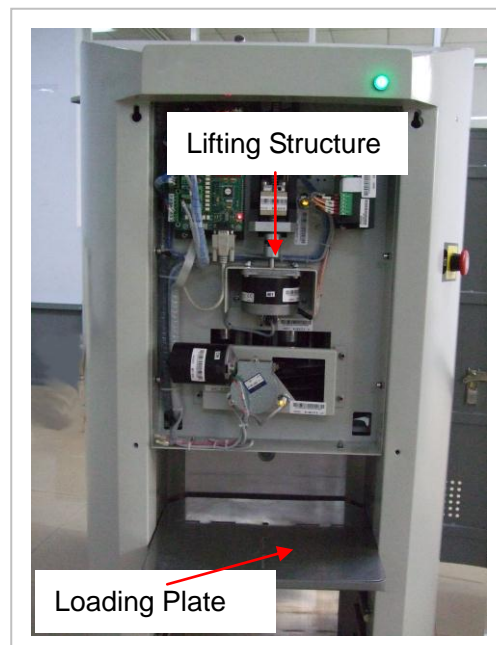



Figure 4.2

- **Canister:** Canister is connected with piston pump and valve.




Figure 4.3

Valve contains valve handle and a nozzle for colorant dispensing.

1.  Maximum capacity is printed on the canister.
2. The nozzle should be kept clean.
3. After refilling canister, the lid should be fastened to prevent colorant from drying.

Max Volume
of colorant

- **Turntable:** Canisters are fixed on the turntable and rotate to the correct dispensing position. Stirring is also carried out while rotating.

 Stir to avoid colorant deposition.

- **Washing System:** Clean the nozzle after colorant dispensing. The washer container must always be filled with water. Check level and replace with fresh water daily.

- **Lifting System:** With the assistance of electrical control system, the A4 can raise and lower the piston to dispense the colorant.

 Only authorized personnel are allowed to open the front door for servicing.

- **Loading Plate:** Loading plate is used to support the base paint can. Position according to the size of the paint can. The photoelectric sensor (Figure 4.6) is used to sense the paint can so make sure the tray and paint can are properly positioned.

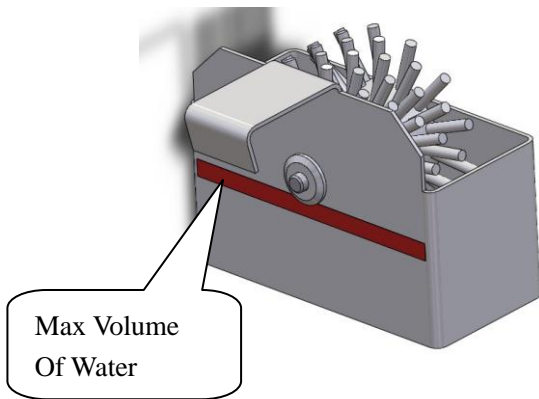


Figure 4.4(Pull-out)



Figure 4.5 (Built-in)

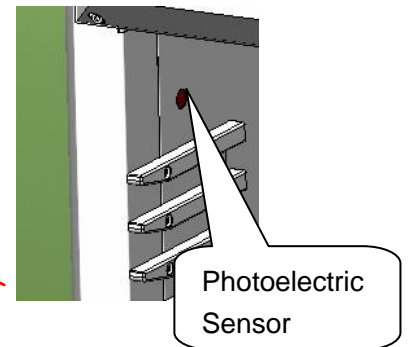


Figure 4.6

Max Volume of Water

5. Installation

5.1 Install the machine



Figure 5.1.1

- Unpack the machine and inner film with necessary tools.
- Take out tool box; check the items inside according to the packing list.
- Use the supplied keys to open the side doors by pressing the button and ejecting the door handle. Turn the door handle to unlatch the door.



Figure 5.1.2

- Lock the bolt connecting the base and pallet with size 8 wrench, and loosen the screw cap on the base. With size 19 wrench, remove the four bolts between machine and the pallet. Unload and place the A4 in the desired location.

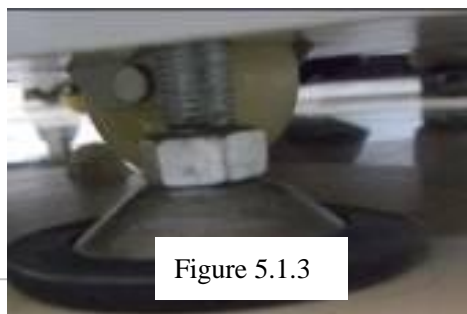


Figure 5.1.3

- With large wrench, adjust the four feet (as Figure 5.1.3 shows) to make them touch the ground and level the A4.



Figure 5.1.4

- Install the mouse pad on the side of the A4 as shown in Figure 5.1.4.



Figure 5.1.5

- Insert the power chord as shown in Figure 5.1.5.
Installation is finished.

5.2 Computer Installation

- Unpack the computer and place it on the bottom shelf of the A4 with the rear of the computer facing to the left for easier connection of the cables.
- Place the keyboard and mouse on the top of the A4, and connect as show in figure 5.2.6.



Use pass-through to route cables



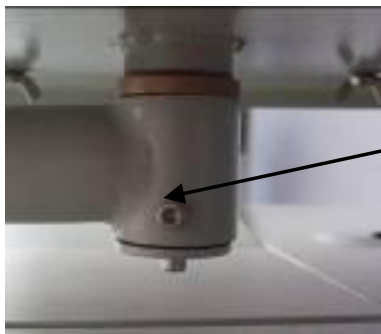
Route cables through the opening above and fasten



Route cables through the opening below

Figure 5.2.6

- Adjust the monitor support to the desired position and tighten both bolts with the supplied tool to hold in place. (See Figure 5.2.7)



Tightening Bolt



Figure 5.2.7

- Place the monitor on the support and using the monitor strips to hold down the monitor as shown in Figure 5.2.8.



Figure 5.2.8

- Connect the monitor power cord and video cable through pass through and to the computer as shown in Figure 5.2.9 ①④.
- Complete computer connection and plug the computer and monitor power cords into the socket as shown in Figure 5.2.9 ②③.
- The computer installation is finished. ⚠ No hot plug of data line.



Figure 5.2.9

5.3 Software Installation

- 1) Turn on the power mains on the back of A4.
- 2) Turn on monitor and computer and boot operating system.
- 3) Insert Color Expert installation disc into CD-ROM drive.

See *Software Manual* for detailed info about installation and use.

6. Machine Adjustment

The A4 has been tested before leaving factory. It is recommended that an authorized personnel will install and adjust the A4 at your location. If not needed, please install and adjust the A4 accordingly.

Main Power
Switch



6.1 Software Adjustment

- 1) Power on the A4 using the mains switch of the rear. Ensure that the Emergency Stop button is depressed.
- 2) Open (double-click the icon) Color Expert 2.0.
- 3) The A4 will begin running a self-check program, and pop up the self-check interface (Figure 6.1.1). Promptly press the Emergency Stop button and check if there is any abnormal noises coming from the A4.
- 4) After start-up is completed, in the software interface, click the formula management section and select the formula type, for example, "dispensed" (Figure 6.1.2), then click "next" to enter the formula information section (Figure 6.1.3). If the formula meets the dispensing requirements, click "dispense" to start dispensing. Open the "job status" to see the dispensing state (Figure 6.1.4). If not, click "back" and select another formula.



Figure 6.1.1

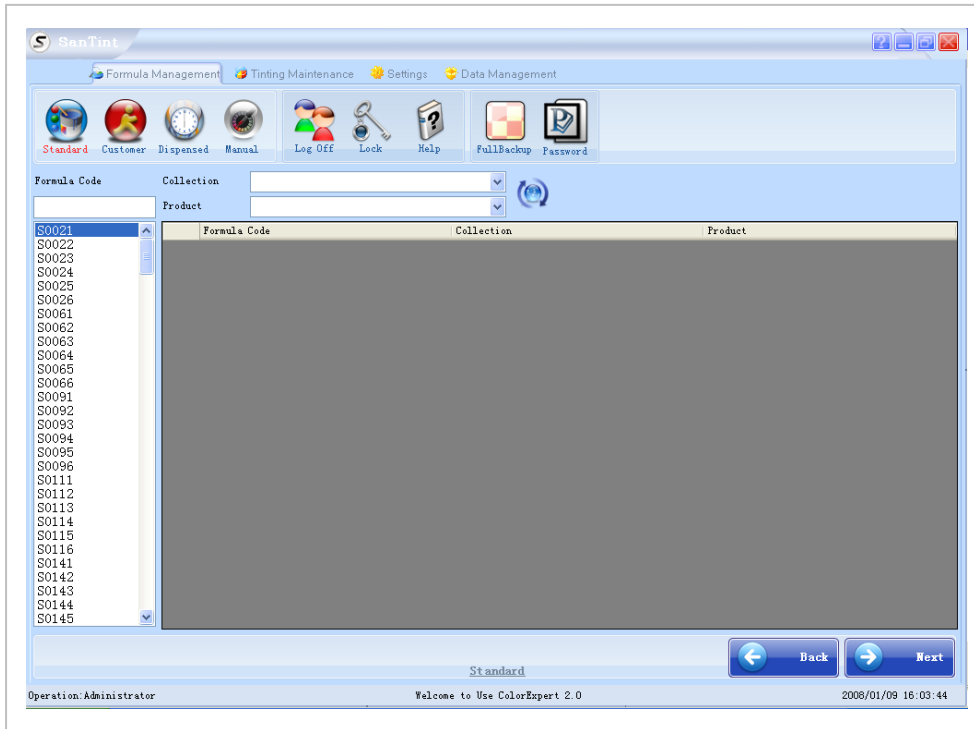


Figure 6.1.2

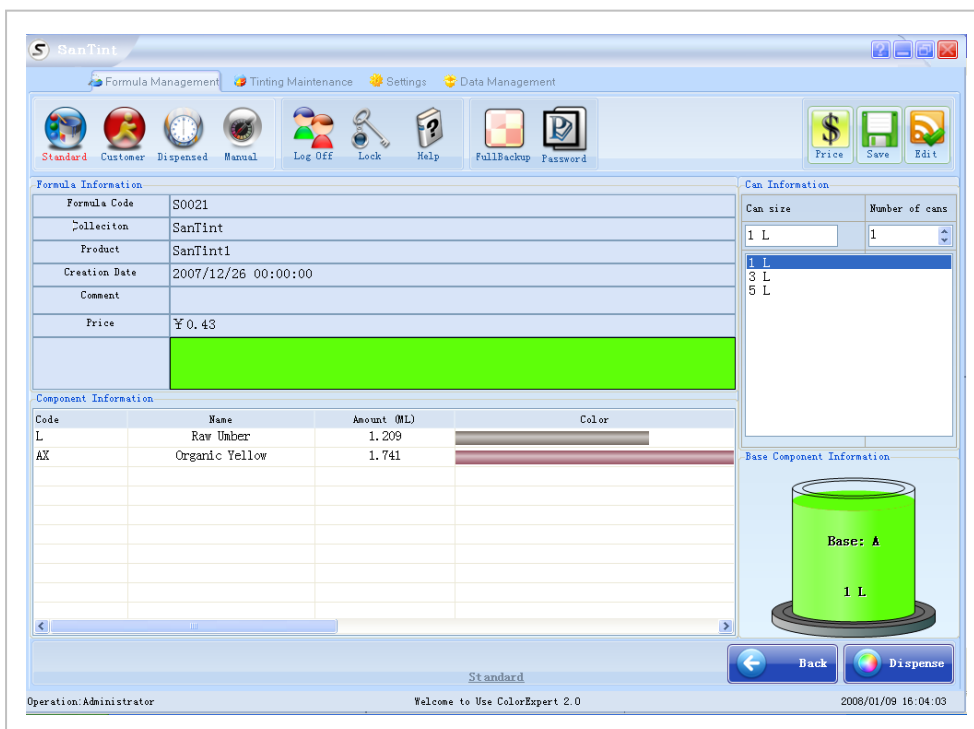


Figure 6.1.3

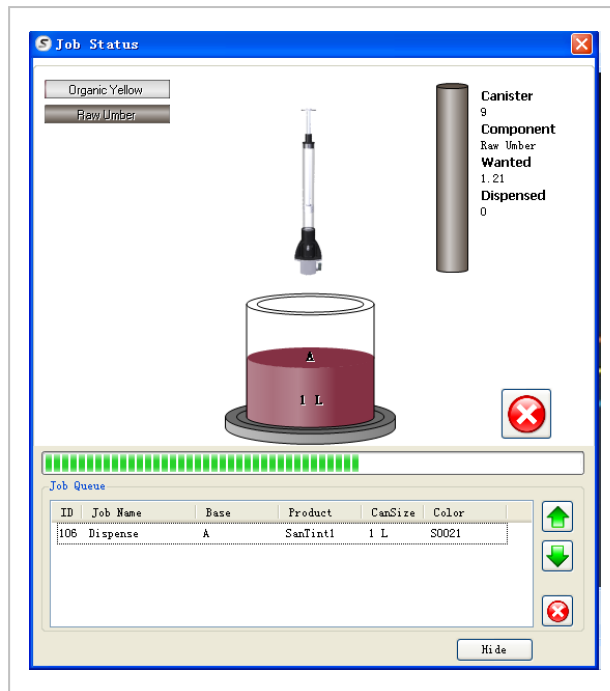


Figure 6.1.4

6.2 A4 Adjustment

When the software shows **Ready**, please start to adjust the A4.

- Dismantle the cleaning box; fill with water or washing liquid.
- Check whether the piston is on the bottom. The initialization of turntable should be in normal.
- Place the paint can on the center of loading plate. If there's no paint can or it is removed suddenly, the software will display, **E18 "No Paint can, colorant can not be spouted out"**.
- Test the switch of sliding door as the A4 will not work when the sliding door is opened.

⚠ Press the Emergency Stop button for any emergency. The Emergency Stop button will also cease the stirring function.

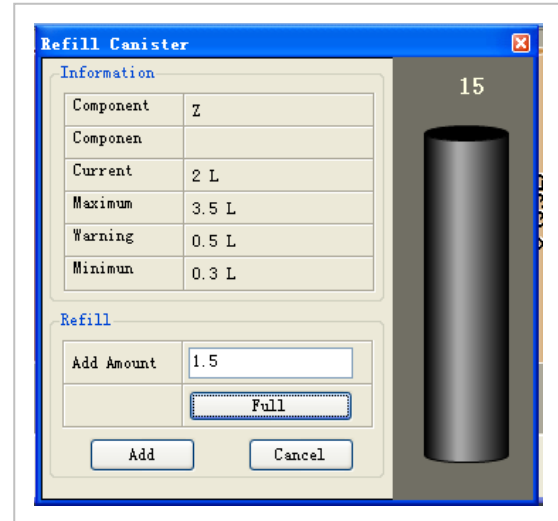
6.3 Add colorant

⚠ Before colorant is added into canister, it must be fully mixed with a stirring ruler. A shaker is not recommended as too many bubbles can affect accuracy.

⚠ The maximum capacity of canister is 1.8/2.3/3.8L, The colorant must not be filled above the uppermost mark of stirring device.


- The A4's distribution is properly set up at the factory. See AllotCansColor.exe in the "Bin" folder of the installation directory. Refer to **Software Manual**. If a change is necessary, reassign the colorant to the respective canisters.
- The default configuration system is to add colorant from left side.

- Select **Maintenance – Tinting maintenance**, select one colorant, press **Add**, fill canister with colorant making sure it is added into proper corresponding canister.
- Open the lid of canister, the corresponding colorant marks are listed on the inside of the canister. The colorant marks are arranged in order and in accordance with the machine's characteristics.
- Open the canister lid and insert smaller part of the stirring ruler into the canister and add colorant along the stirring ruler into the canister slowly. Cover the lid. The A4 will not operate when the its top cover plate is open.
- Enter the added amount of colorant into the input text box, press **Add**.
- Add colorant into corresponding canister one by one.
- Select stirring to stir colorant.




6.4 Purging the pump


- Air in the pump influences the accuracy, so purging the air in pumps is a must.
- The A4 has an automatic purge function.
- The A4 can automatically lift and lower the piston plunger and it repeat it for 3 times.
- When the colorant is filled for the first time, place a cup under the dispensing nozzle. Select **Tool** → **Manual Dispense** → **input 30ml**. The A4 will then lift the piston plunger automatically, open the valve and depress the plunger. It will repeat this three times, filling the cup.
- Do not reuse the discharged colorant and do not manually lift the piston.
- Repeat the purge function for all colorant canisters. Do not dispense the different colorant into the same cup.

 Please cover the lids promptly to avoid evaporation.

6.5 Colorant Calibration

The A4 has been calibrated in the factory. Customers can also recalibrate 4-7 hours after the colorant have been filled if need. A scale with minimum accuracy of 0.001g and a form of colorant density are needed for recalibration.

 Stir for 30 minutes after adding colorant to remove bubbles.

 When the dispensing of colorant is not continuous, please re-purge or check if nozzle is blocked.

After 4 hours, the A4 is ready to dispense colorant.

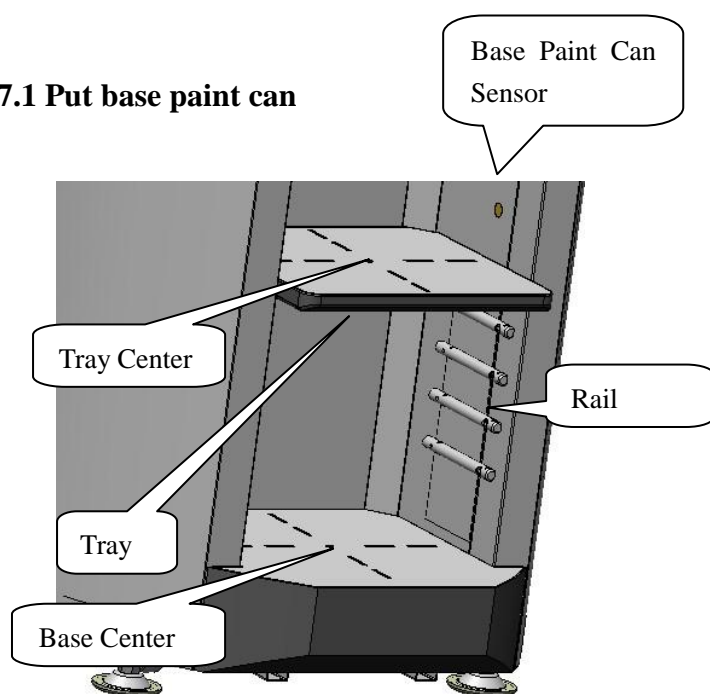
7. Operation

The operation manual help has detailed explanation of the demand, transfer, and modification of the dispensing formula. Please follow the help when operating. Operator should have training before operation.

⚠ The machine should always be powered on.

⚠ The colorant level in canister should not be lower than 0.4L.

7.1 Put base paint can

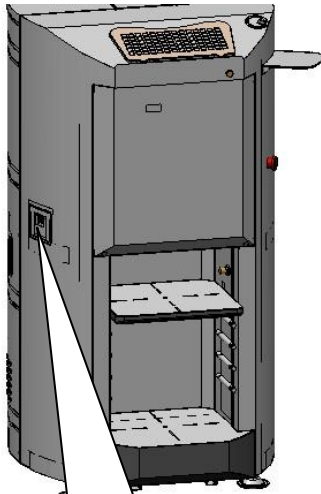


- 1) Select right height of tray rail and slide tray inside along with the rail.
- 2) Don't place tray on the top of rail as base paint can tumble.
- 3) Open base paint can cover.
- 4) Place the can on the center of tray.
- 5) The top of can should be higher than can sensor.
- 6) Ready for dispensing now.
- 7) For large can, don't use tray. Place it directly on the bottom base.

7.2 Replace water in cleaning box

Both pull-out cleaning box and built-in cleaning box are available for customers' needs. Replace water in the cleaning box as follows:

7.2.1 Pull-out cleaning box.



- 1) Lift lock handle to pull out cleaning box.
- 2) Pull it out by grabbing the handle.
- 3) Clean box, add water (water lever should be lower than wheel axis).
- 4) Reinsert cleaning box and push down lock handle.

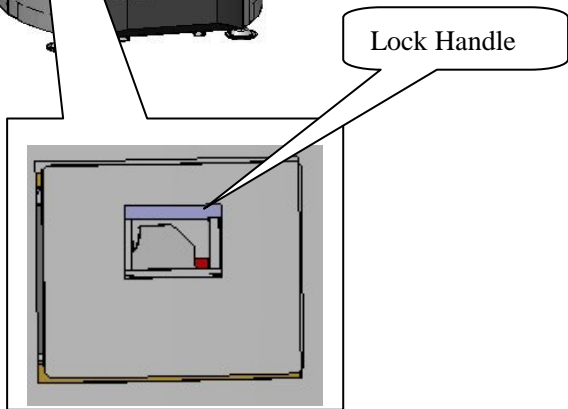


Figure 7.2.1

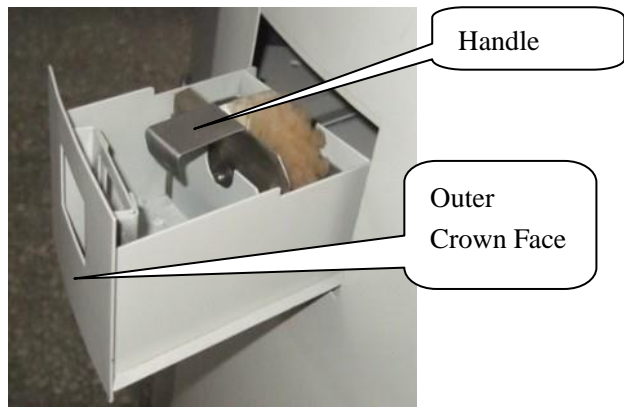


Figure 7.2.2

7.2.2 Built-in cleaning box.

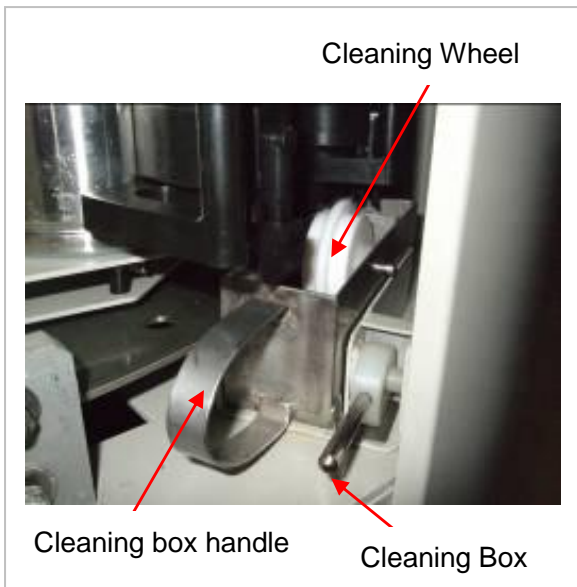


Figure 7.2.2

- 1) Lift lock handle to loosen cleaning box.
- 2) Pull it out by grabbing the handle.
- 3) Clean box, add water (water lever should be lower than wheel axis).
- 4) Reinsert cleaning box and push down lock handle.

8. Maintenance

In order to keep the machine in optimum condition and reduce issues, daily and periodical maintenance should be performed (Note: Dismantling the equipment requires trained professional).

8.1 Daily maintenance:

- Clean and change cleaning box water twice a day.
- Add colorant on time when software shows low colorant warning. The precision will be affected when colorant in the canister is lower than 0.4L. Remember to secure the lid after adding colorant.
- Always keep the A4 powered on, even when not in use as the colorant cannot be stirred when it is powered off.
- Clean nozzle if colorant is dispensed in a straight stream.
- If the A4 is not used for more than 3 days, please dispense out 0.3ml of colorant from every canister maintain dispensing precision.



Figure 8.1.1

8.2 Periodical maintenance:

Do the following maintenance every 1-6 months:

- Check stirring paddle inside each canister, check whether it works; if not, repair.
- Check the valve handle to check whether it can be opened and closed well.
- Lubricate screw and guiding rod once every six months.
- If the A4 has not been used for a long time (more than 2 weeks), clean every nozzle before use.

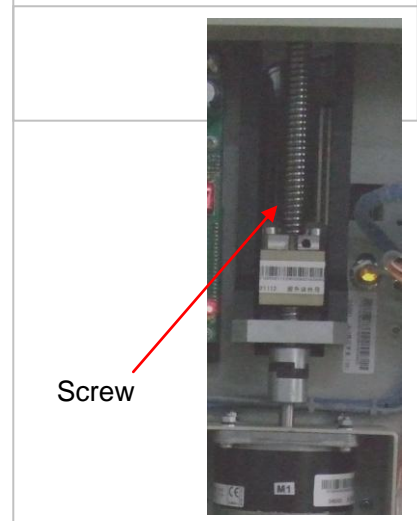


Figure 8.2.1

9. Replace spare parts

1) Replacing Outer Canister:

Loosen the three bolts used to fix the canister with screw driver and then remove the canister by turning it anti-clockwise.

2) Replacing Inner Canister:

- Please remove the right outer canister when replacing the inner one.
- Unscrew the bolts used to fix the canister to the shelf, and pull the shelf out slightly (10mm), pulling too much will lead to leaking.
- The canister can be removed from turntable by turning it anti-clockwise.

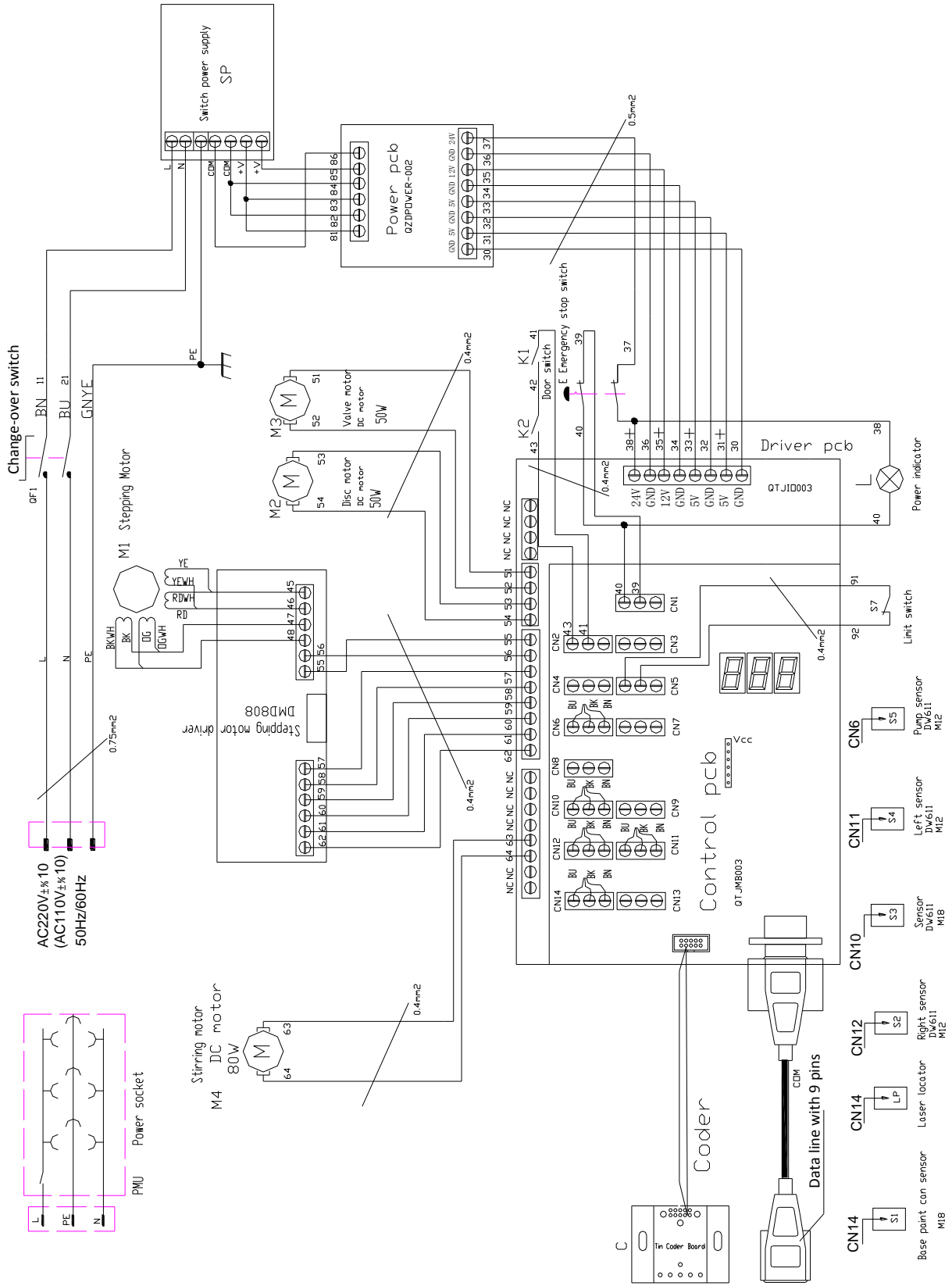
3) Replacing Rubber Pipe Cover:

Turn the handle away from the nozzle as shown in the picture and remove the old cover and installing the new one.



10. Wiring diagram

Figure 9.1



11. Trouble Shooting

Problem	Cause	Action
Stirring motor doesn't work.	<ol style="list-style-type: none"> 1. A4 is not power on. 2. Fuse is broken. 3. Motor is not connected. 4. Motor is broken. 	<ol style="list-style-type: none"> 1. Check the power. 2. Change the fuse. 3. Open the side door, reconnect wire. 4. Change the motor.
Colorant dispense out not continually.	<ol style="list-style-type: none"> 1. There is air in the pump cylinder. 2. Colorant level is too low. 3. Colorant is dry and blocked. 	<ol style="list-style-type: none"> 1. Purge cylinder. 2. Add colorant. 3. Clean canister.
Canister is loosed.	Fasten screw is loosed.	Fasten screw.
Dispensing colorant is difficult.	<ol style="list-style-type: none"> 1. Nozzle is blocked. 2. Valve motor is broken. 3. Valve handle cannot open. 	<ol style="list-style-type: none"> 1. Clean Nozzle. 2. Change valve motor. 3. Adjust the motor and valve position.
Piston difficult to move.	<ol style="list-style-type: none"> 1. Colorant is dried inside. 2. Screw drive and guiding rod are not lubricated. 3. Fastening screw is loosed. 	<ol style="list-style-type: none"> 1. Empty colorant, clean canister and pump cylinder. 2. Lubricate screw drive and guiding rod 3. Fasten screw.
Abnormal noise from step motor.	<ol style="list-style-type: none"> 1. Voltage is out of normal range. 2. Screw drive and guiding rod are not lubricated. 3. Fastening screw is loosed. 	<ol style="list-style-type: none"> 1. Check the power supply. 2. Lubricate screw and guiding rod 3. Fasten screw.
Colorant appears on the nozzle.	Sealing washer is damaged.	Change sealing washer.
LCD shows "Emergency Button Pressed".	<ol style="list-style-type: none"> 1. Emergency button is pressed. 2. Emergency button is broken or the wire is disconnected. 	<ol style="list-style-type: none"> Release emergency button. Replace emergency button or connect wire.
LCD shows "Door Open".	The door is not closed well.	Close the door.

Error Code	Cause	Action
E11	Emergency button is pressed.	Release emergency button.

E12	Cover is open. Cover micro switch is broken.	Close cover. Replace micro switch.
E18	No base paint can. Base paint can is too far away from sensor Sensor is broken.	Place base paint can. Reposition base paint can closer. Adjust or change base paint can sensor.
E31	Valve motor is broken. Vale motor driver is broken. Right valve sensor too far away. Right valve sensor is broken.	Change valve motor. Replace motor driver board. Reposition sensor. Replace sensor.
E32	Step motor is broken. Step motor driver is broken. Valve sensor too far away. Valve sensor is broke.	Replace step motor. Replace motor driver board. Replace sensor. Replace sensor.
E34	Canister position sensor too far away. Canister position sensor is broken.	Adjust sensor. Replace sensor.
E35	Turntable motor broken. Turntable doesn't move. Turntable driver broken. Canister code sensor broken.	Replace turntable motor. Replace driver board. Replace code sensor.
E36	Counting magnet is in wrong the position. Canister code sensor broken.	Reposition magnet in the correct position. Replace code sensor.
E37	Canister position error. Canister position sensor too far away. Canister position sensor broken. Turntable moved.	No canister found. Closers sensor. Change the sensor. Adjust distance of driving wheel or change driver motor.
E38	Piston rod is lifted. Piston head sensor too far away.	Reposition the piston rod. Reposition sensor.
E39	Turntable moves while stepping motor and valve are not in home position.	Check that the valve is in home position and the step motor home sensor is lit.
E41	Valve motor is broken. Vale motor driver is broken. Left valve sensor too far away. Left valve sensor is broken.	Replace valve motor. Replace motor driver board. Reposition sensor. Replace sensor.

Contact with supplier when issues arise. Please remember to provide the model and series number of the unit when contacting with the supplier.

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