TRAINING PRESENTATION

Rottweil® i-Jet series

V12.2.4

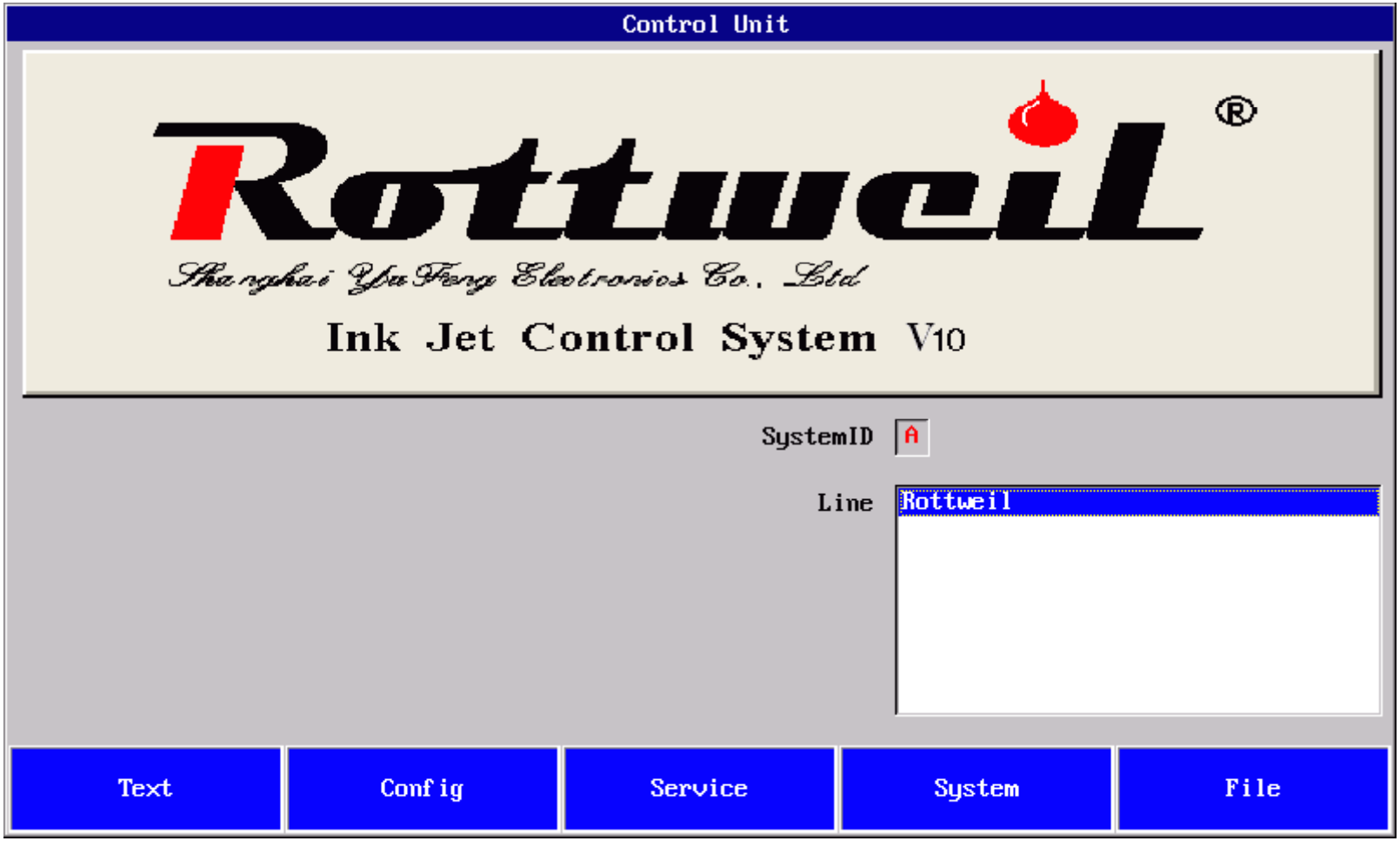
Aug 24, 2010

CONTENT OF TRAINING

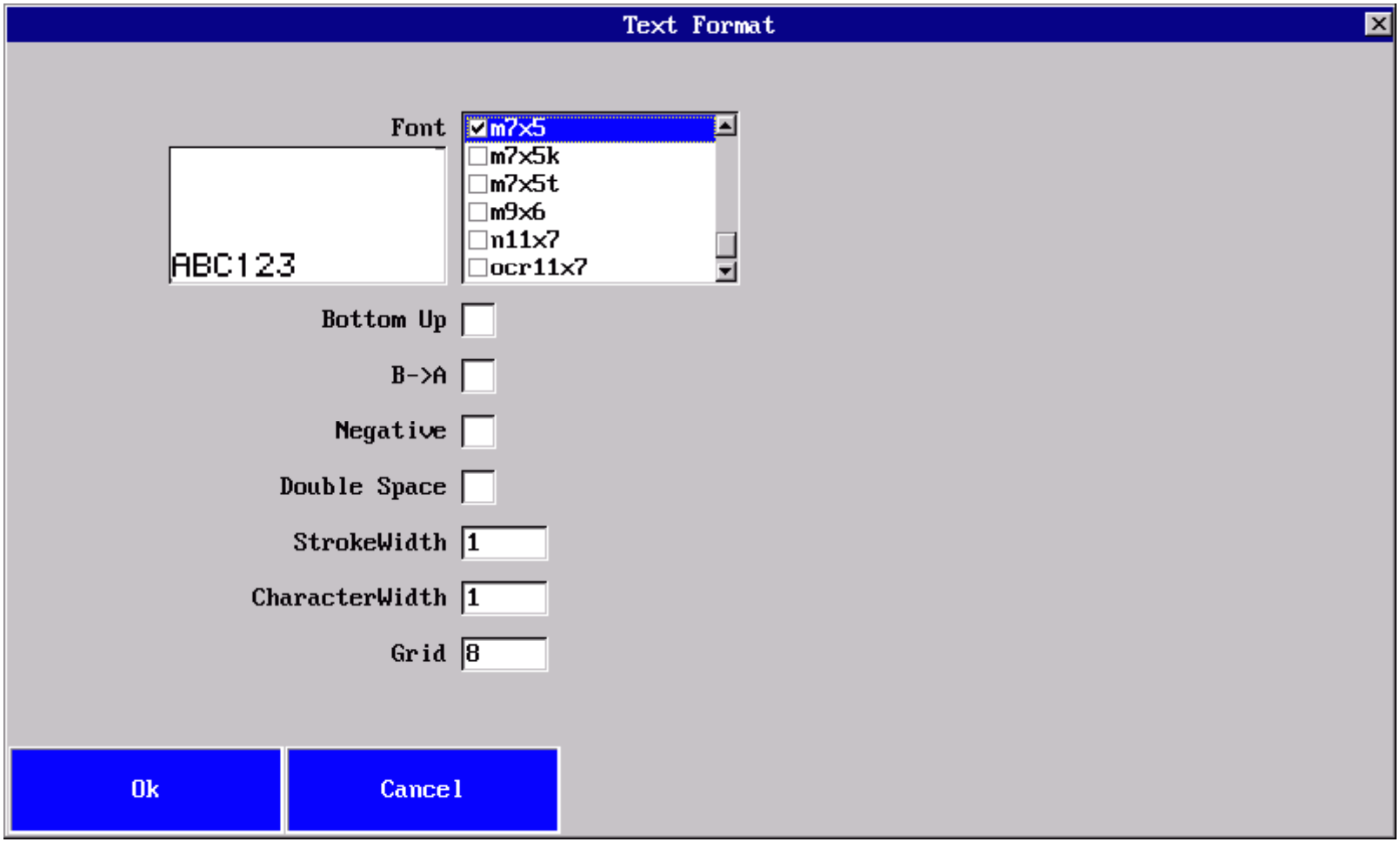
- Operation/Software
- Hydraulic system
- Trouble shooting

Operation/Software

Default page



Text format page

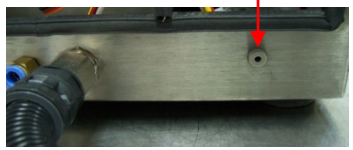


Hydraulic System

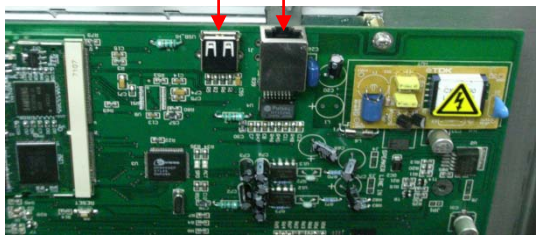
Back view of printer cabinet

Plug type

Air-bleed hole 9

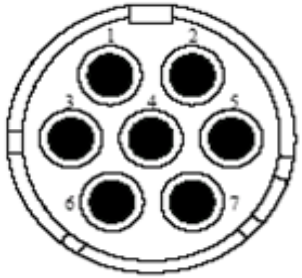


USB port 10 11 Ethernet port



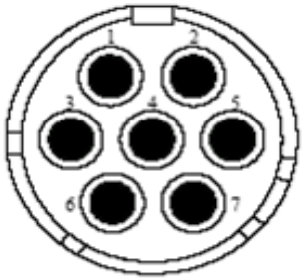
Back view of printer cabinet

Plug type



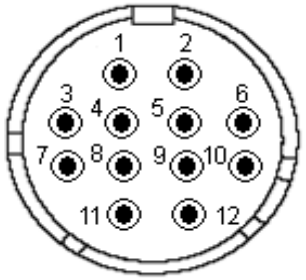
Product sensor-/
Alarm output-socket2

1	+UB int.(12VDC)
2	GND int.
3	NC(opening contact---Alarm output)
4	Input Product Sensor
5	NC
6	NO(closing contact---Alarm output)
7	C(centre contact---Alarm output)
Housing	Shield



Encoder-socket1

1	+UB int.(12VDC)
2	GND int.
3	Encoder Track A
4	NC
5	Encoder Track B
6	NC
7	NC
Housing	Shield



Encoder-socket1

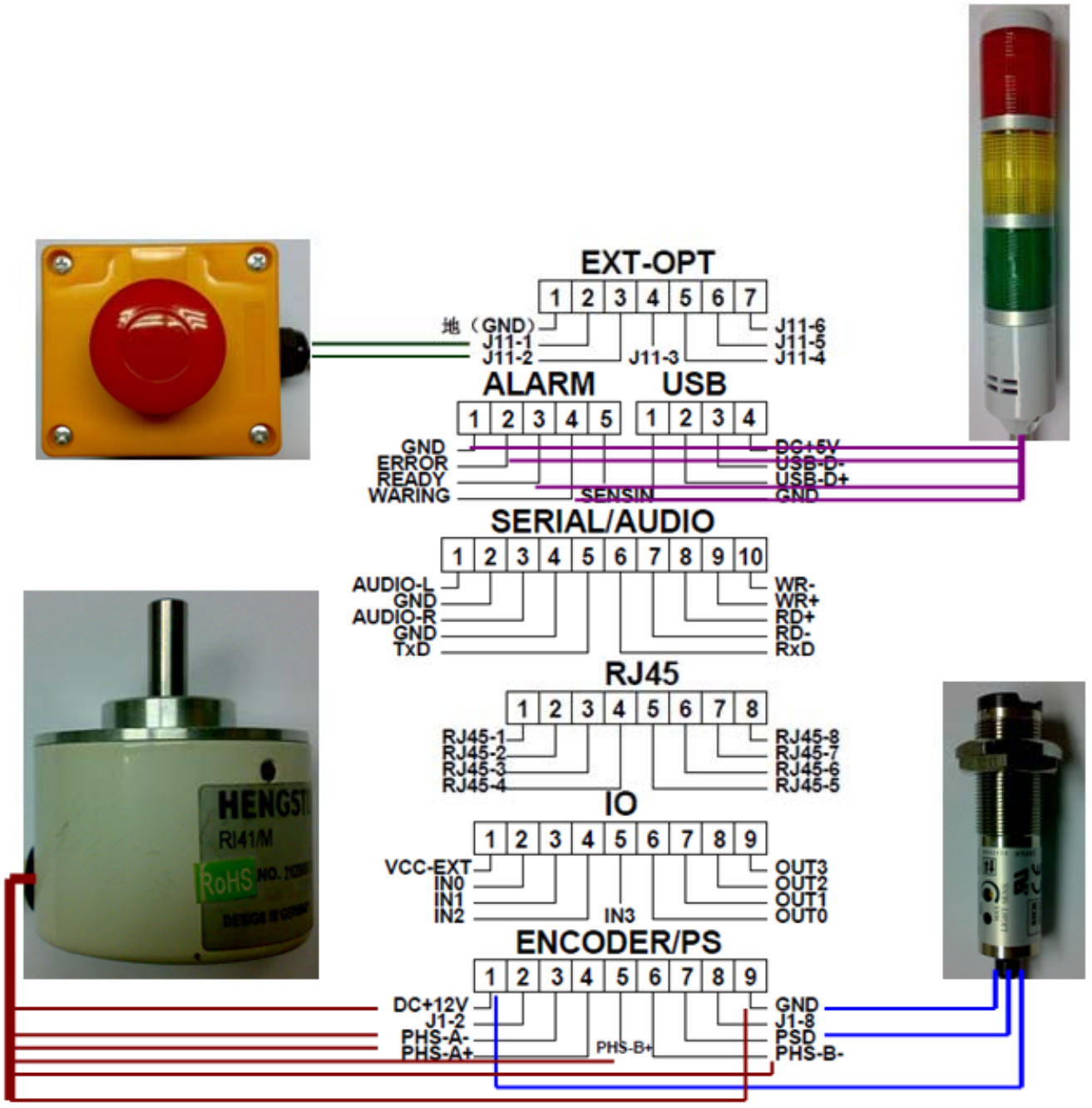
1	+UB int(+12vDC)
2	GND int
3	Encoder Phase A
4	None
5	None
6	Encoder Phase B
7	Encoder Phase $\overline{A}$
8	None
9	None
10	Encoder Phase $\overline{B}$
11	Return Zero
12	Grounding
Housing	Shield

Back view of printer cabinet

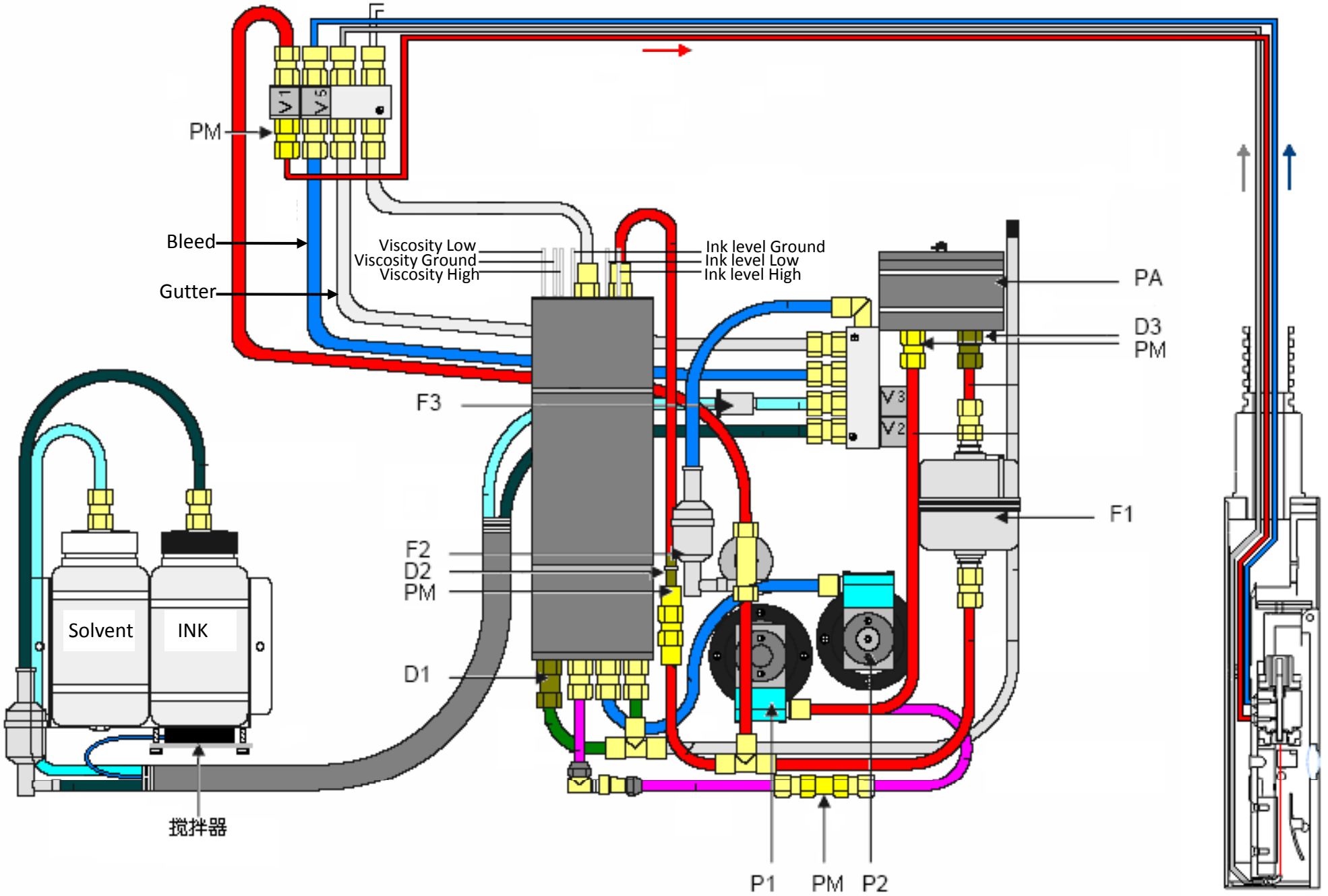
Connection hub type

Back view of printer cabinet

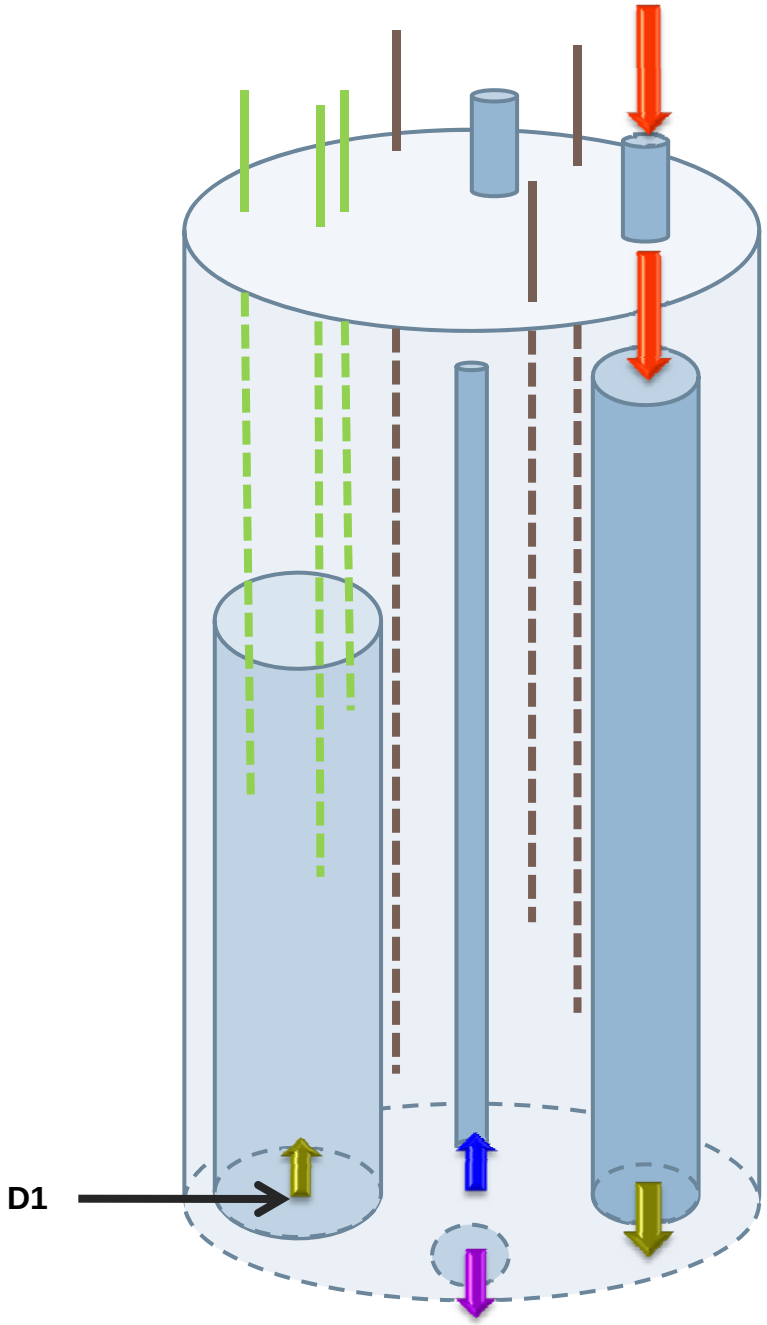
Connection hub type



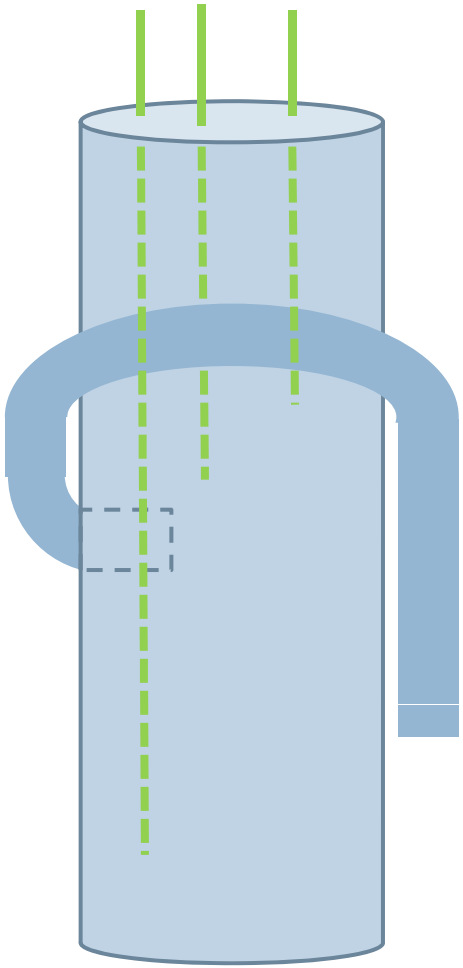
Hydraulic system illustration - 1



Mix tank illustration - 1



Mix tank illustration - 2



Viscosity Measuring System

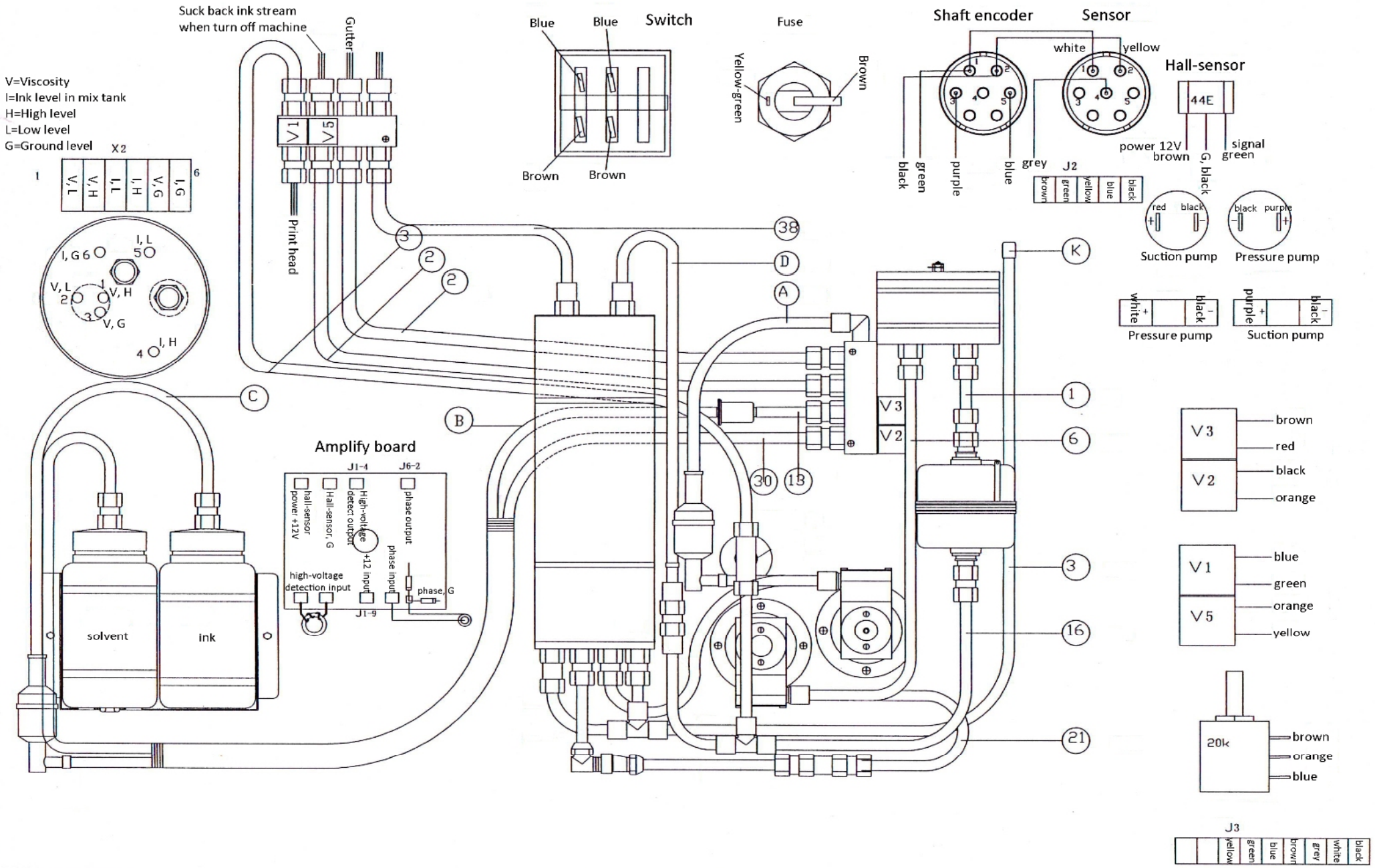
1-Three needles inside the viscosity tube of the mix tank.

2-Three needles: Viscosity High, Viscosity Low, and Ground.

3-Ink level start to contact the ground then contact low.

4-When ink level touches high, ink drain out to mix tank by the tube.

Hydraulic system illustration - 3



Hydraulic system illustration - 4

01 = Outlet tube

D1 = Flow restrictor for measuring the viscosity time

D2 = Flow restrictor for limiting the quantity supplied by the pressure pump

D3 = Flow restrictor in the absorber

F1 = Main filter

F2 = Ink return filter

F3 = Filter for valve V3

F4 = Filter for valve V4

F5 = Air filter

IFS = Inkflow sensor

P1 = Pressure pump

P2 = Suction pump

PA = Pulsation absorber

PM = Protection mesh

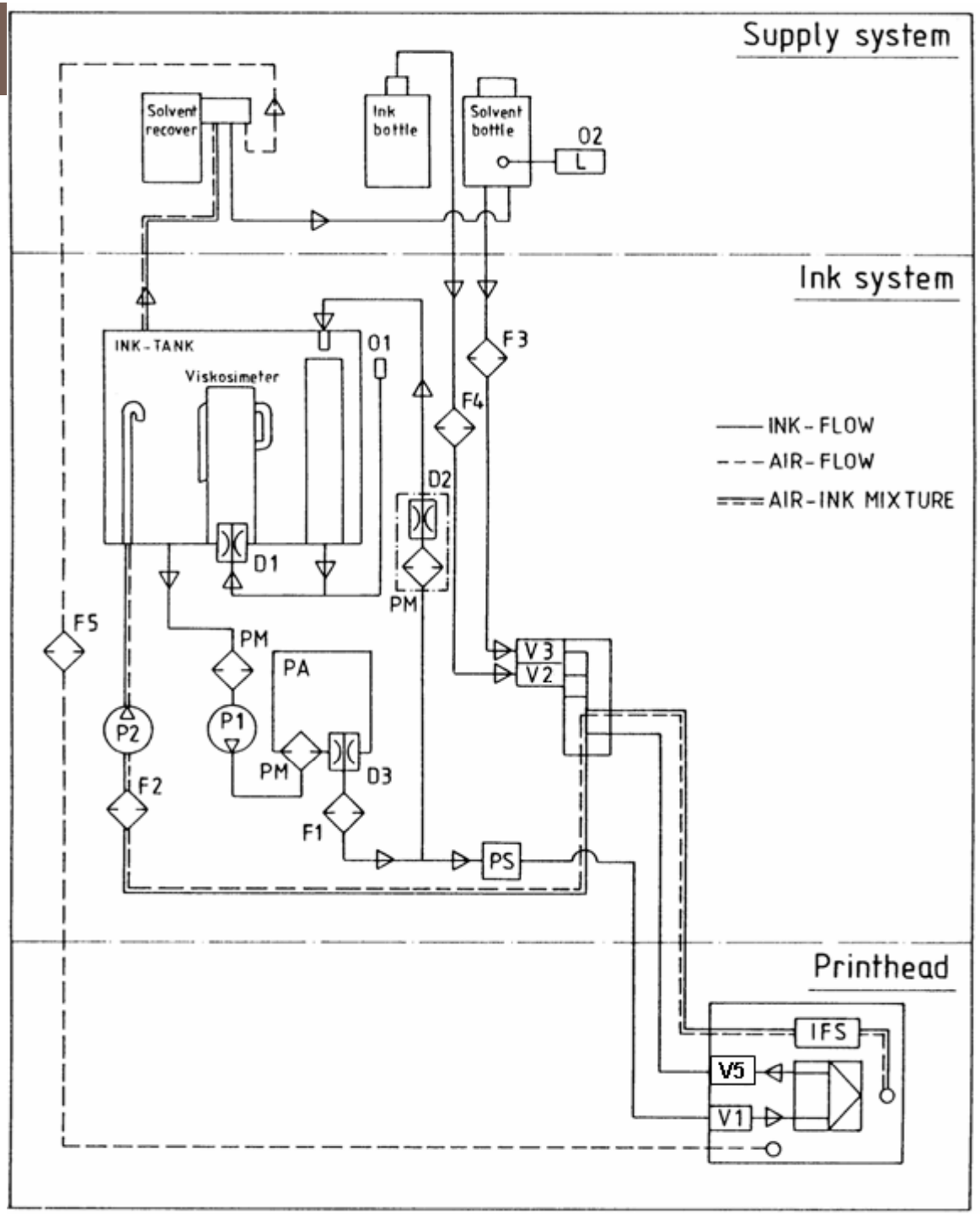
PS = Pressure sensor

V1 = Ink-on valve

V5 = Bleeding valve

V3 = Solvent-add valve

V2 = Ink-add valve



Magnetic valve

Electrical part, be away from ink. Ink can damage the wiring inside this part.

Be aware of this small pin and do not lose it.

When dismantle the valve:

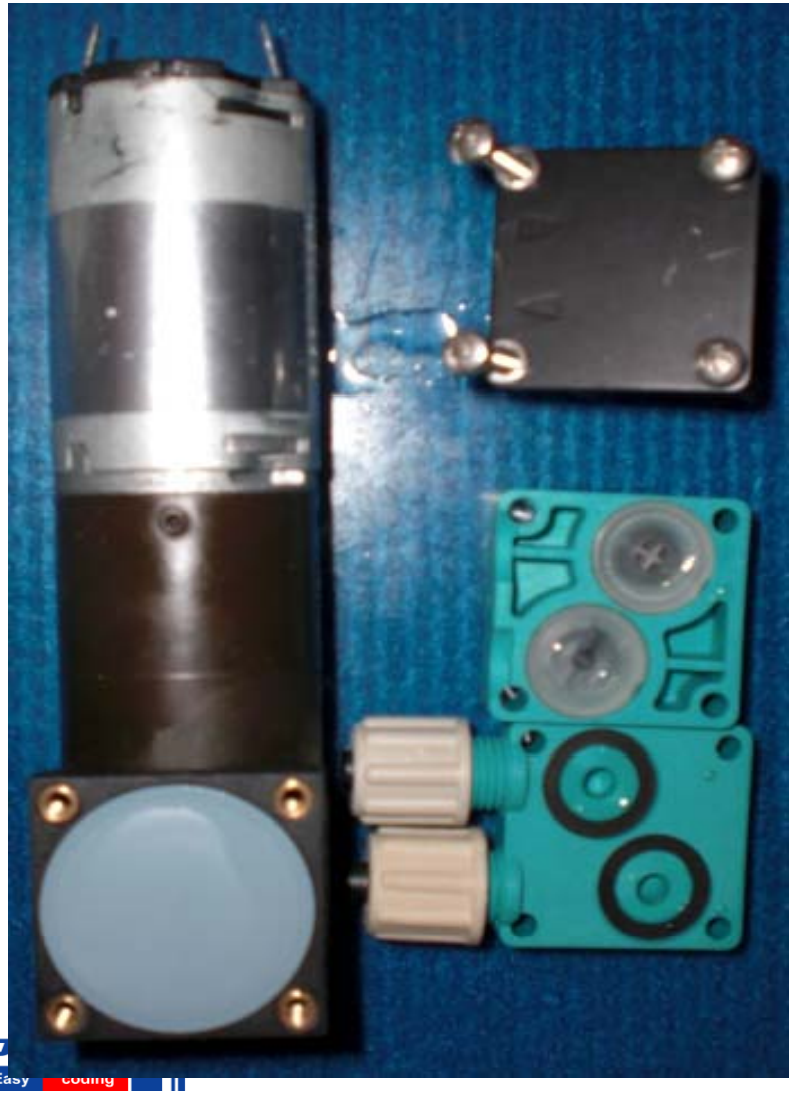
1-V1 & V5 at print head, dismantle one by one.

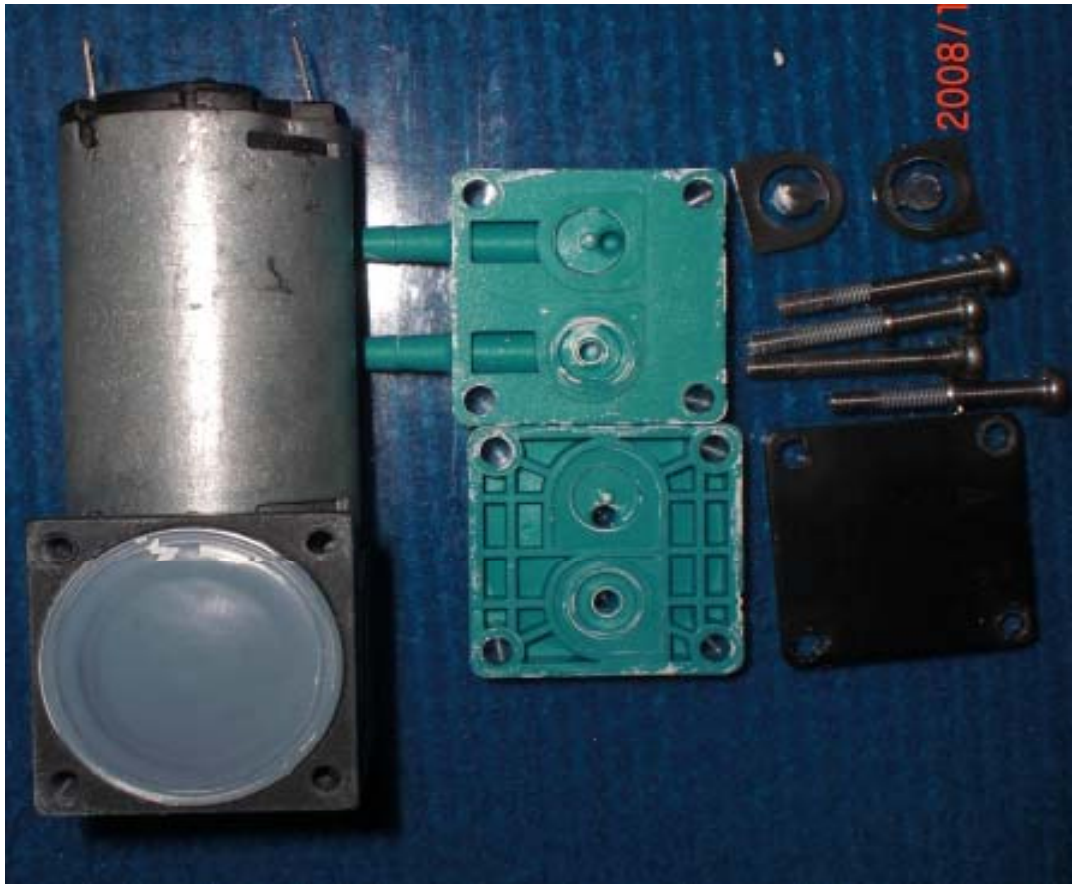
2-Dismatle the screw of valve, should be 1st, 3rd, 2nd and 4th sequence.

Pressure pump, Vacuum pump

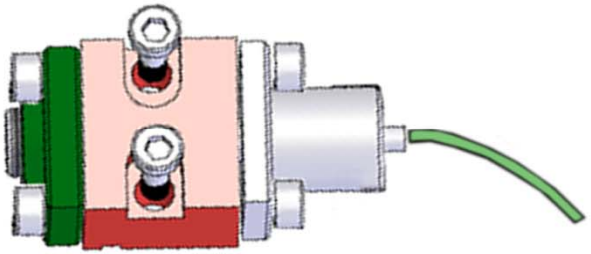
1.Be aware of the one-way valve inside the pump.

2.Do not lose the Oring inside.





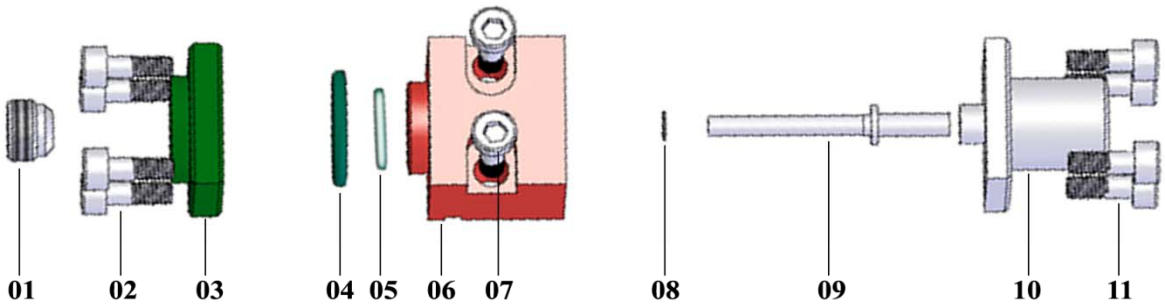
Ink chamber



1.Be aware of the one-way valve inside the pump.

2.Do not lose the Oring inside.

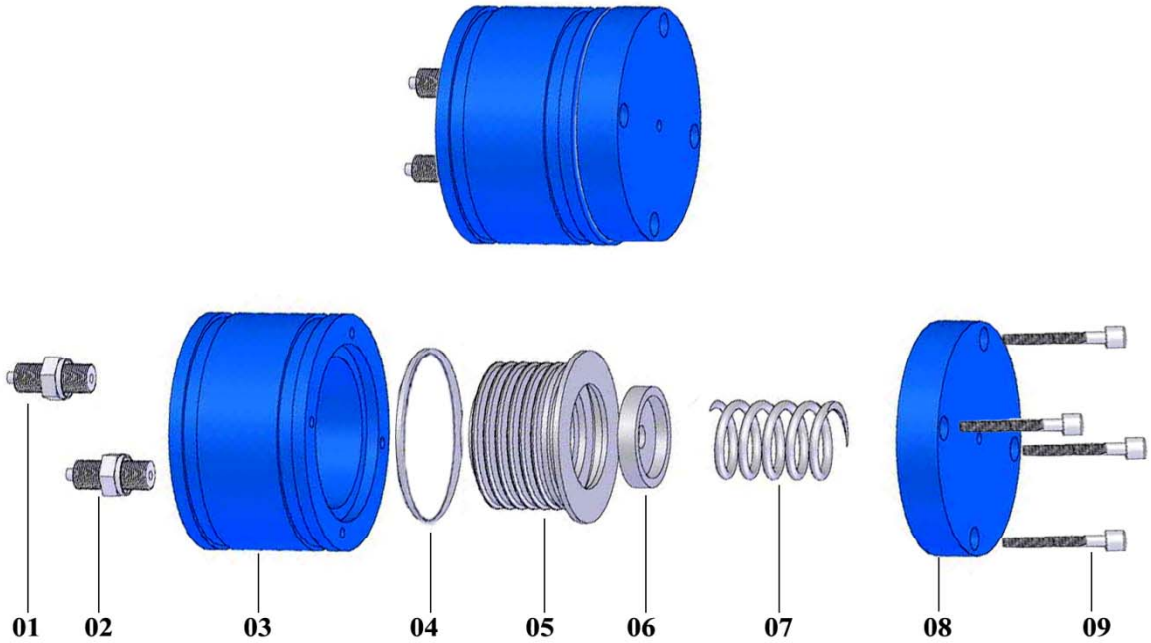
3.White teflon Oring is the key part. Be aware of do not squeeze it too much. If it gets flat, need to change a new one.



NO	QTY	Parts No	Description
01	1	NZ-01	Nozzle
02	4	NZ-02	Adjustable Bolt
03	1	NZ-03	Nozzle Holder
04	1	NZ-04	Flexible Oring
05	1	NZ-05	Teflon Ring
06	1	NZ-06	Nozzle Housing
07	2	NZ-07	Housing Bolt
08	1	NZ-08	Resonator Oring
09	1	NZ-09	Resonator
10	1	NZ-10	Adjustable Bolt

Rottweil® Easy coding

Damper

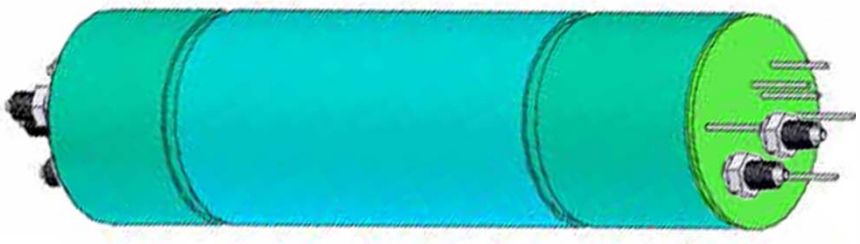


NO	QTY	Parts No	Description
01	1	BF-01	Protection Mesh Fitting
02	1	BF-02	Restrictor D3
03	1	BF-03	Buffer Cylinder
04	1	BF-04	Buffer Oring
05	1	BF-05	Buffer
06	1	BF-06	Spring Pedestal
07	2	BF-07	Buffer Pressure Spring
08	1	BF-08	Buffer Cover
09	1	BF-09	Cover Bolt

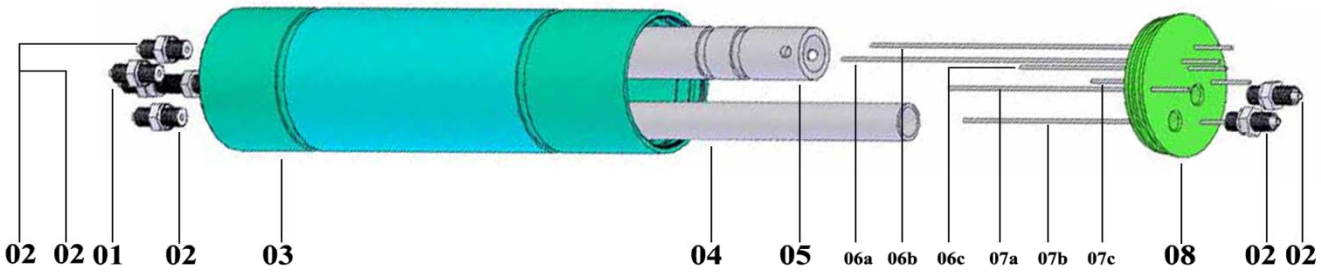
Rottweil® Easy coding

Mix tank

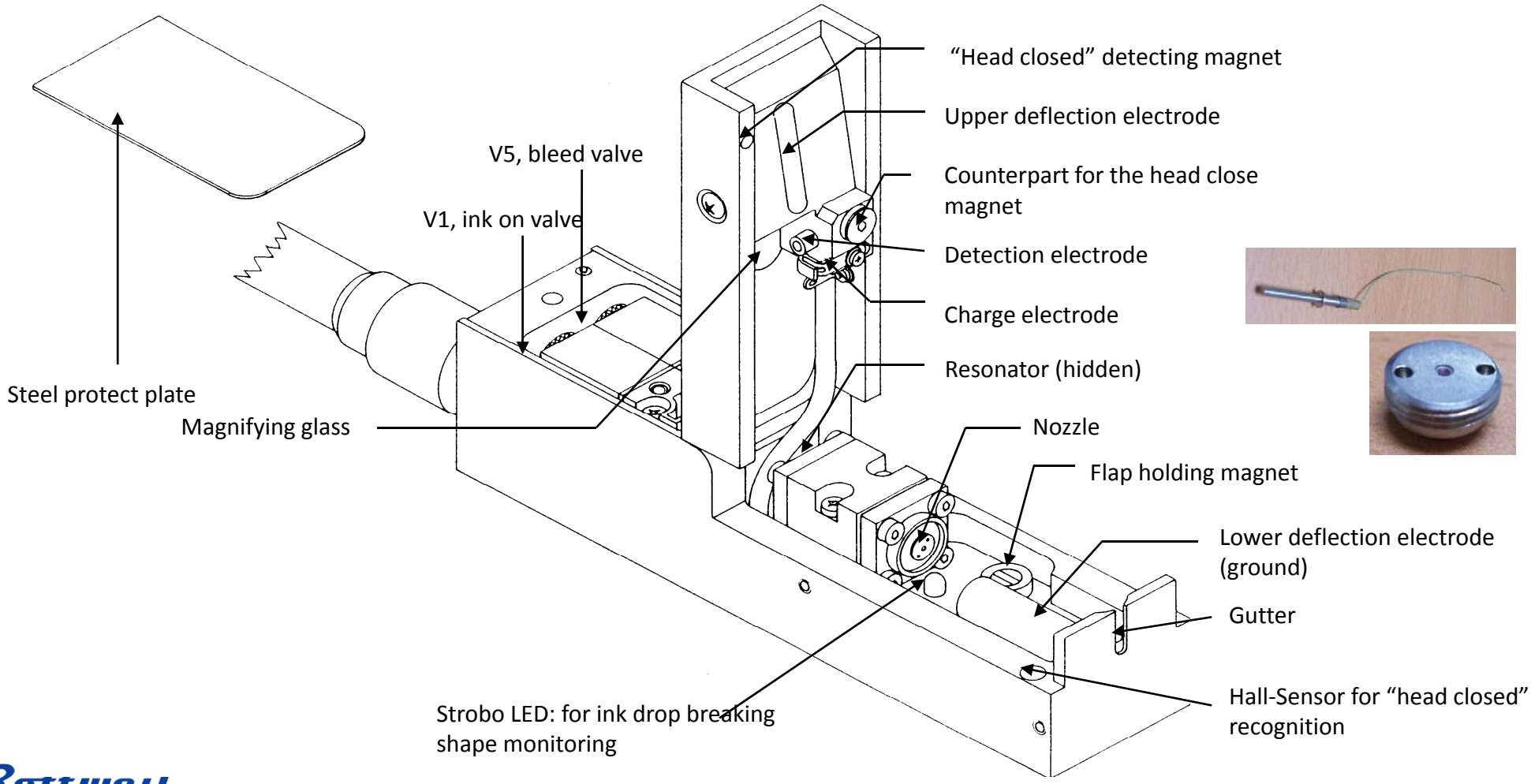
MIXING TANK ASSEMBLY



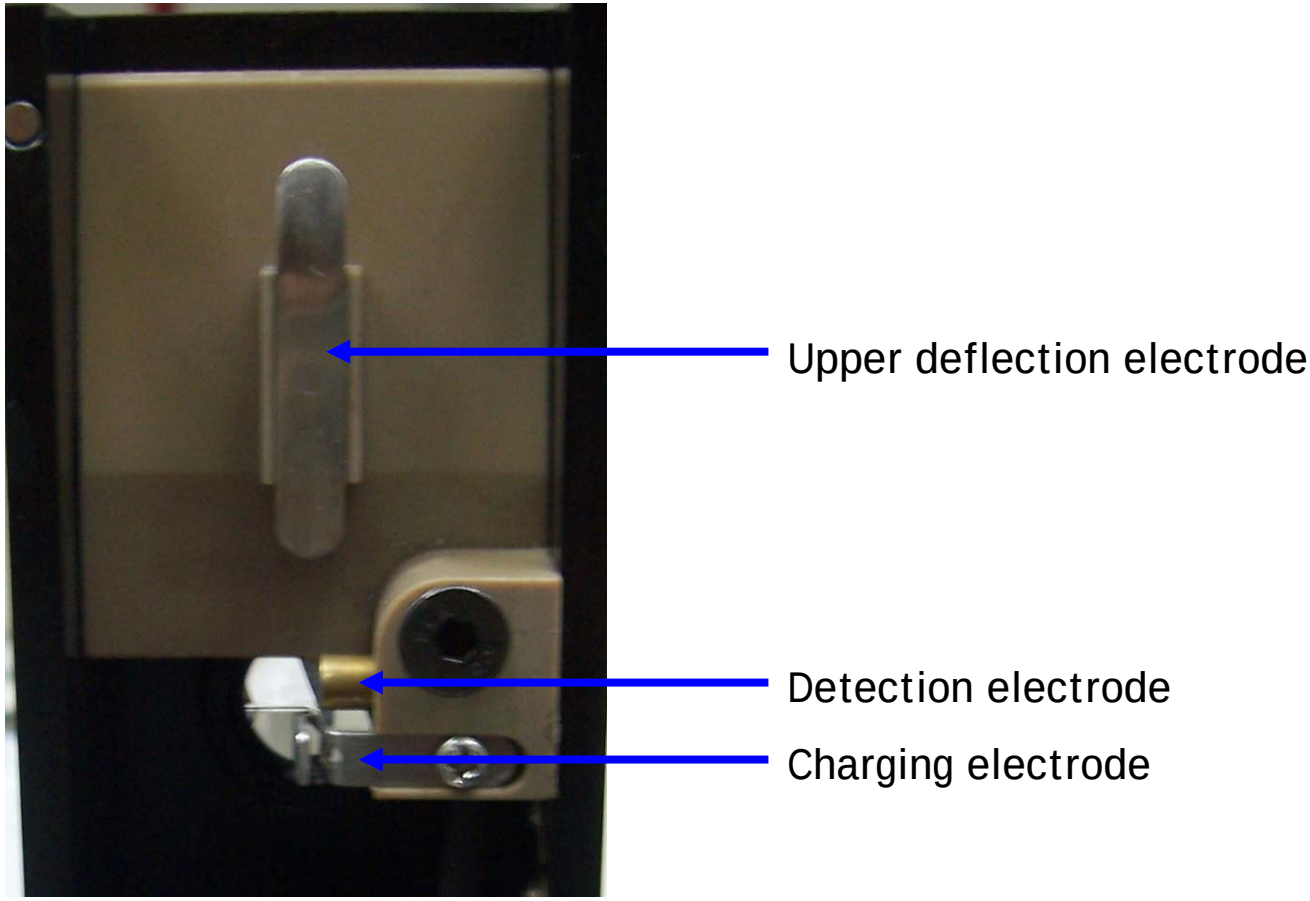
NO	QTY	Parts No	Description
01	1	MT-01	Restrictor D2
02	1	MT-02	Fitting (1/8" X 6 mm)
03	1	MT-03	Mixing Tank
04	1	MT-04	Viscosity Measuring Cylinder (Inlet)
05	1	MT-05	Viscosity Measuring Cylinder
06	1	MT-07a	Ink Level Needle (GND)
07	1	MT-07b	Ink Level Needle (Lower)
08	1	MT-07c	Ink Level Needle (Upper)
09	1	MT-06a	Viscosity Level Needle (GND)
10	1	MT-06b	Viscosity Level Needle (Lower)
11	1	MT-06c	Viscosity Level Needle (Upper)



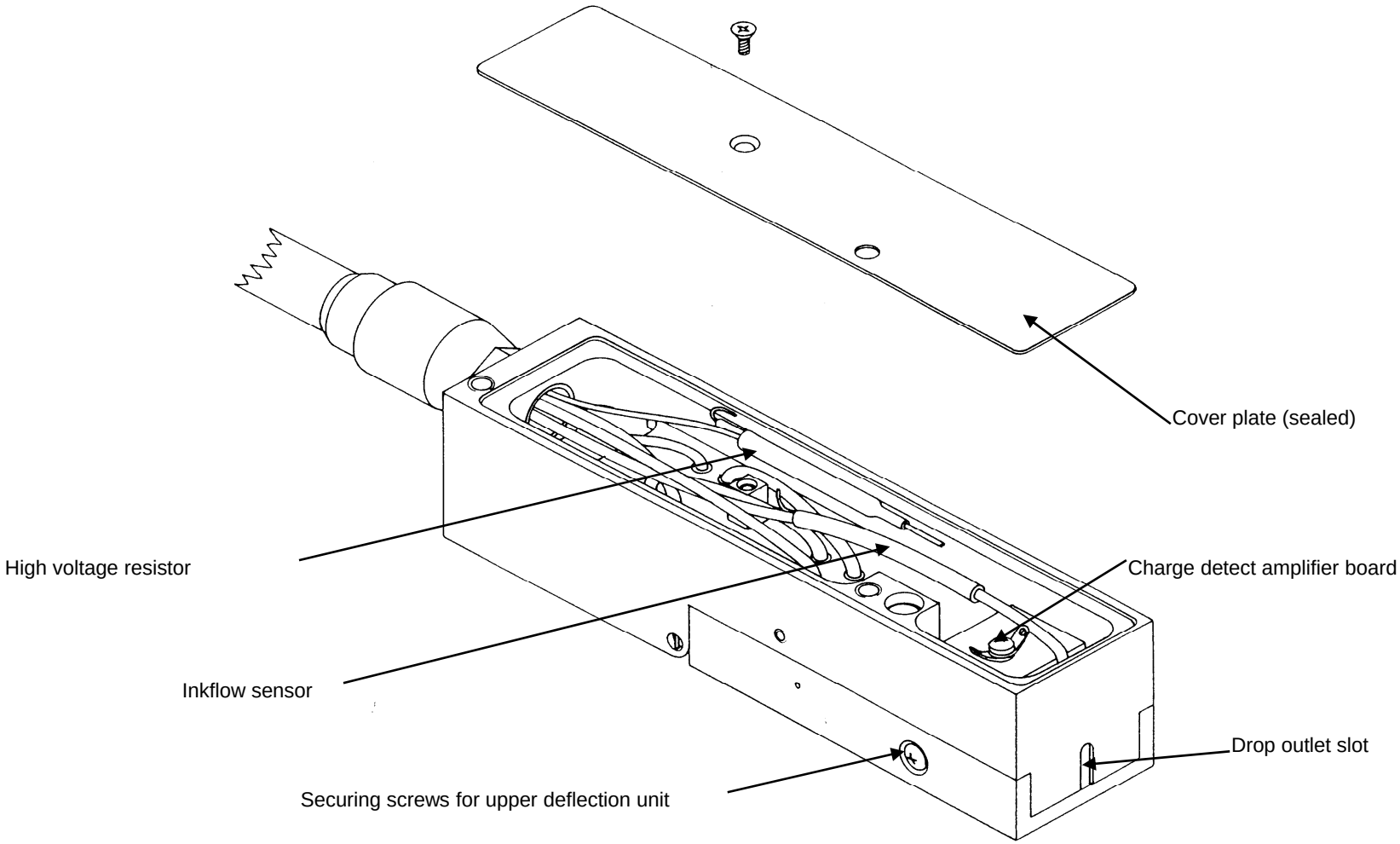
Print head front view



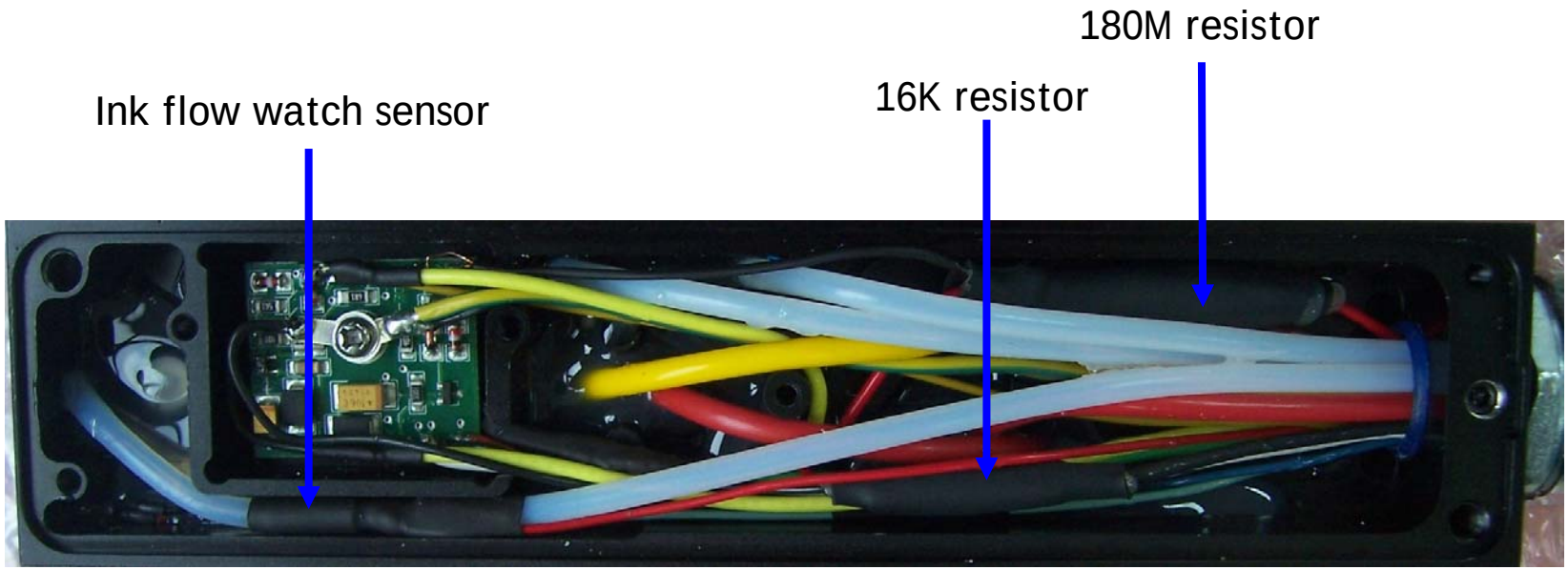
Print head front view-62.5K



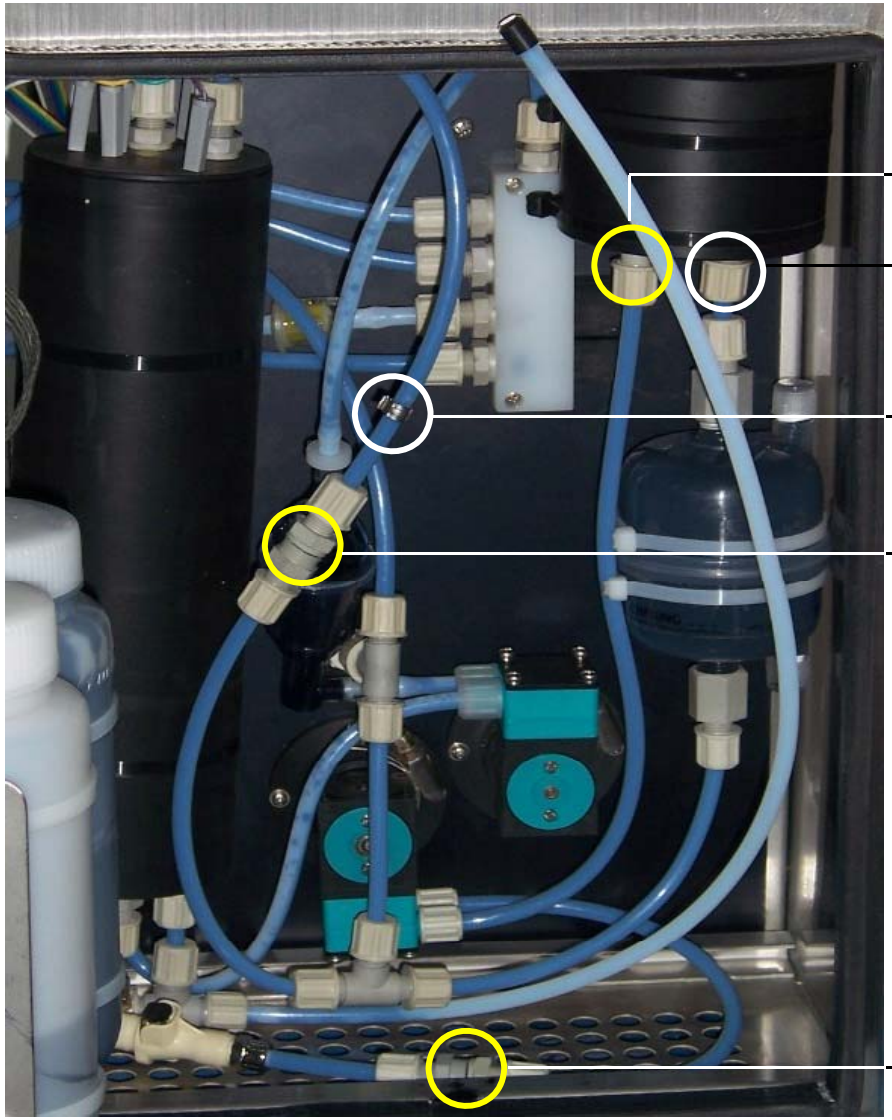
Print head back view



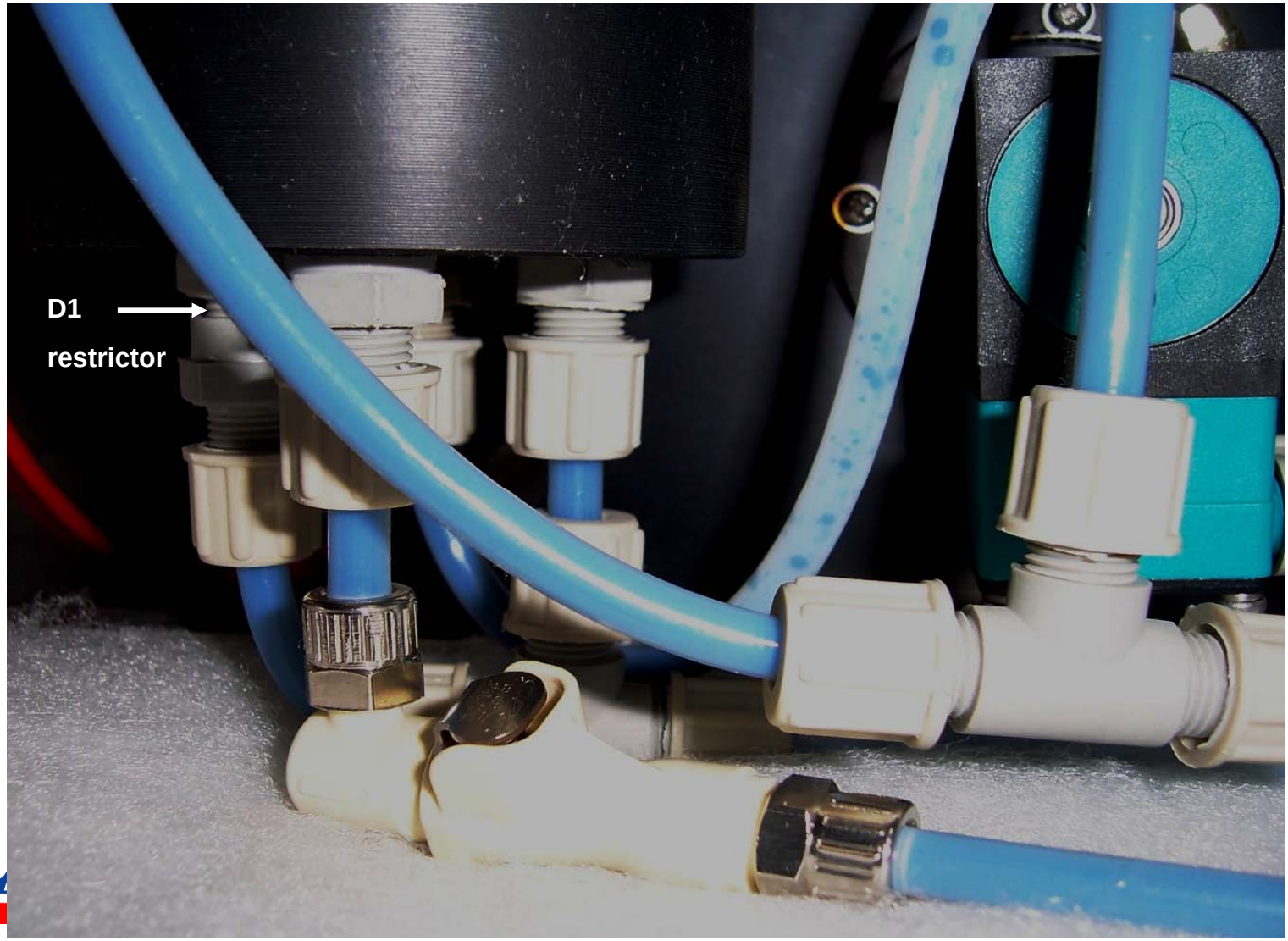
Print head back view



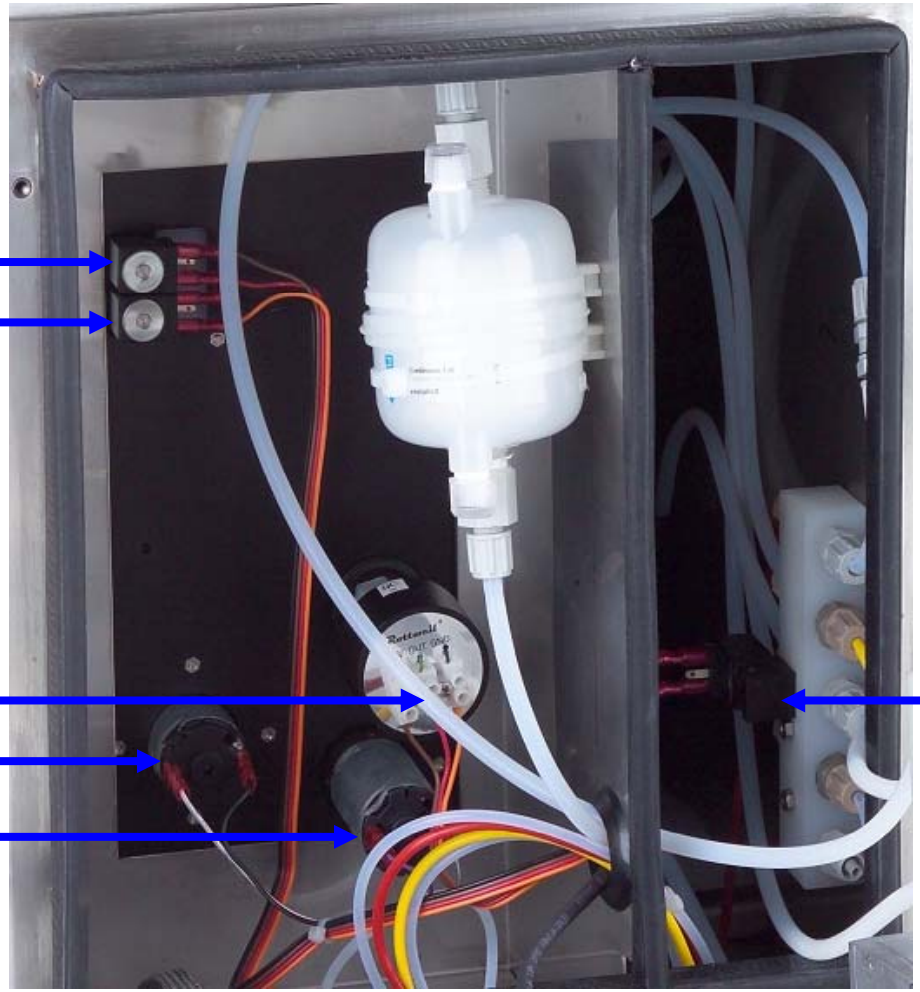
Cabinet front view – D2/D3 restrictor, Mesh filters



Mix tank fittings, D1 restrictor



Cabinet back view



First Fill Adjustment

First Fill of Ink/Additive

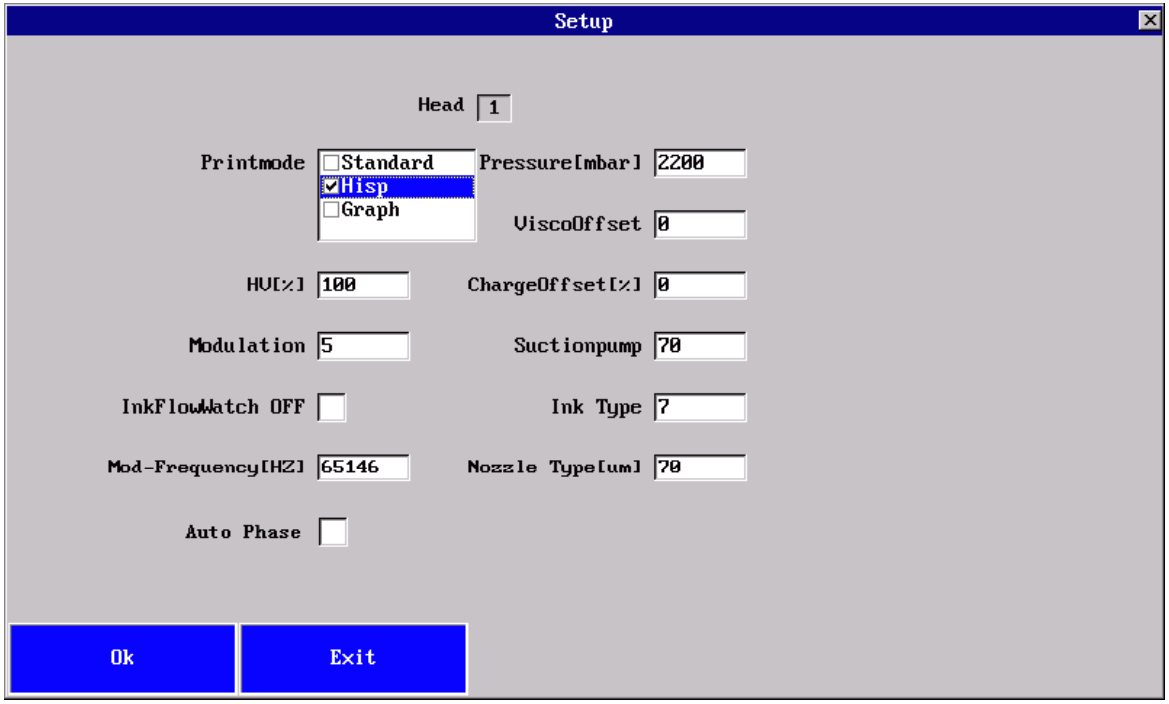
- Check the package kit.
  - Nozzle key, Air blower etc.
  - Ink system, electricity system check, each connection if good or not.
- First fill
  - Add ink and solvent
  - Turn on inkjet
  - “SERVICE”→“FUNCTION”→“First Fill” active
  - About 450ml ink be added into the ink system
  - Successful completion of first fill, remove the cap from gutter and the sealing tape from nozzle
  - Clean nozzle manually with solvent
  - FUNCTION->CLEAN NOZZLE, PURGE.
  - Active INK ON.

First Fill of Ink/Additive

- Troubles may encountered
  - Can not add ink.
  - No pressure display in STATUS after first fill.
  - No ink stream on. (with pressure value displayed)

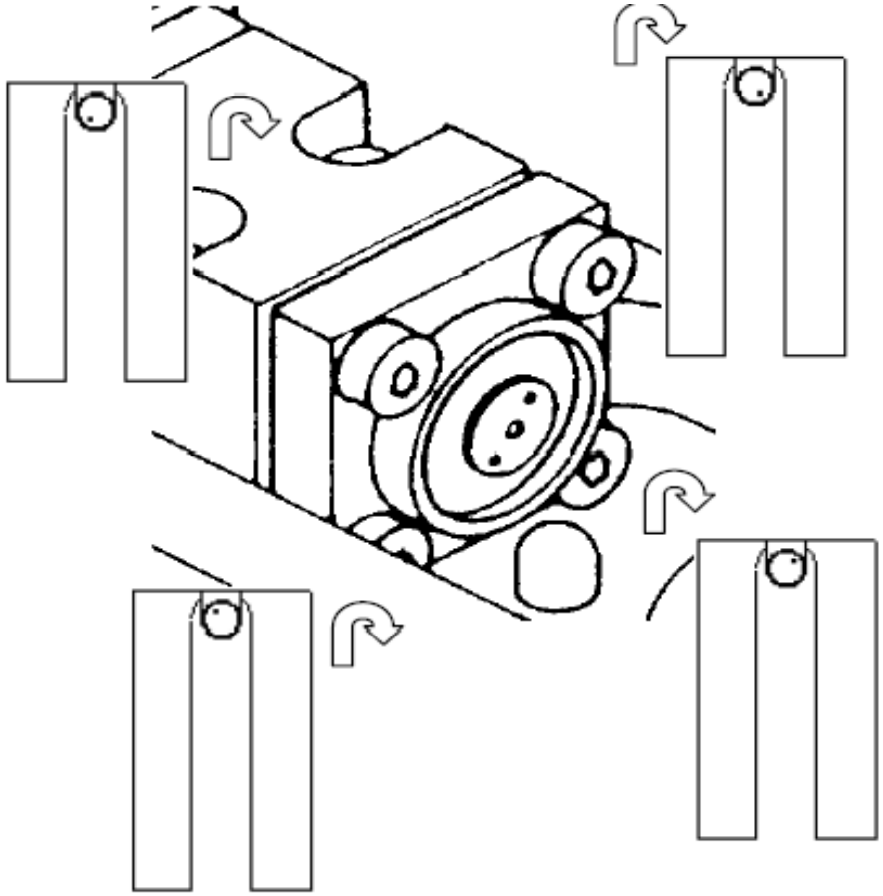
Default settings

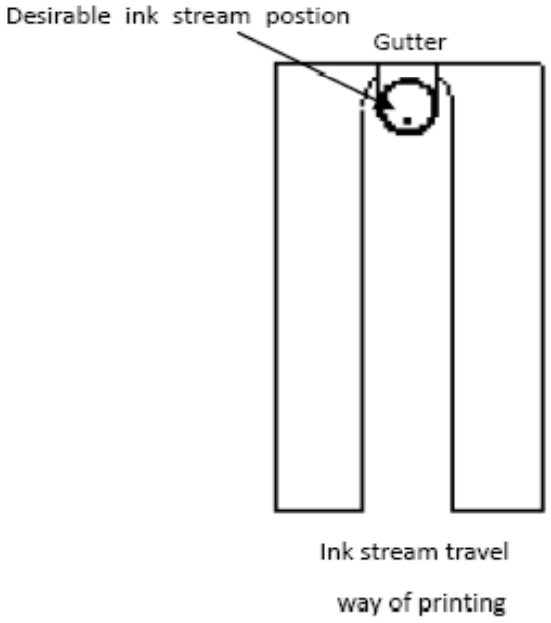
- Default settings (ONLY when use Rottweil original ink/solvent)
  - Pressure: 2200
  - ViscoOffset: 0 (black machine), 0 (pigment machine)



Alignment adjustment

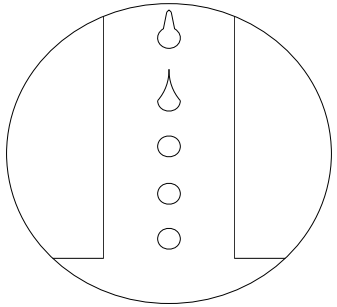
- Alignment-Ideal ink stream position in gutter





Ink breaking shape adjustment

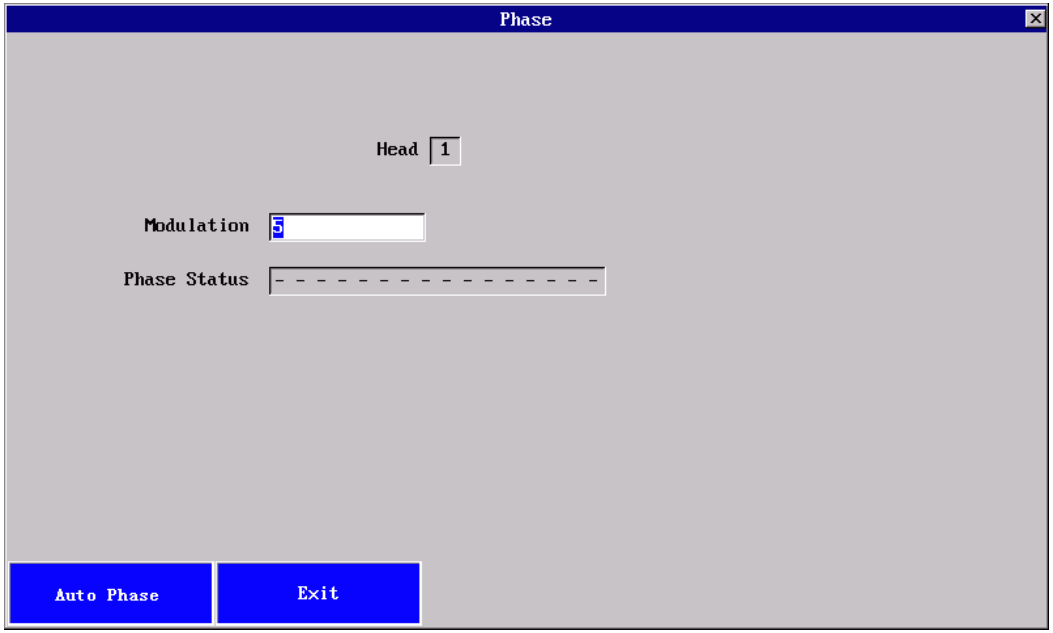
- Phase / Ink breaking shape



Desirable ink drop position

Phase/Modulation

- Phase/Ink breaking shape



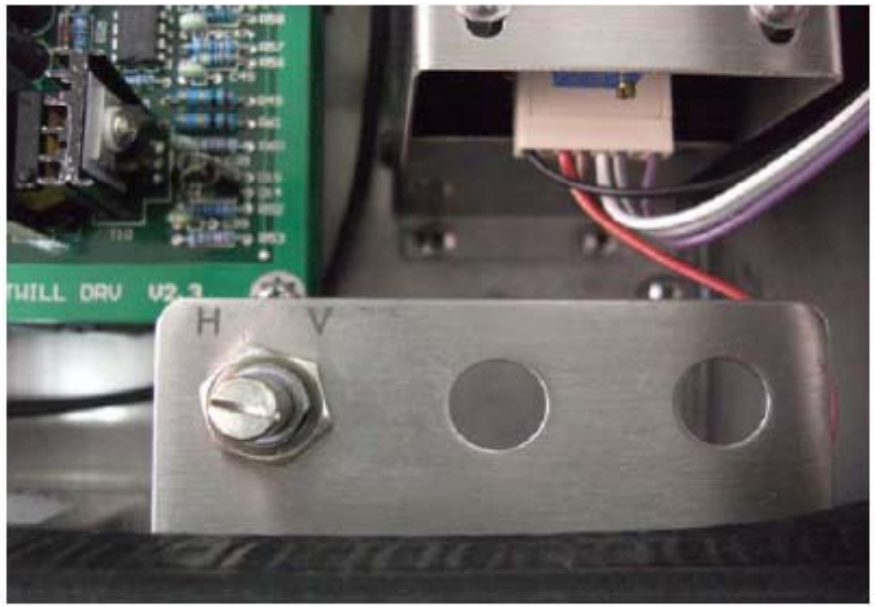
1-2 continuous stars

HV adjustment

- HV

Adjust HV value manually; the print text height can be changed.

Increase HV value	Increase print text height	Turn clock-wise
Decrease HV value	Decrease print text height	Turn anti-clock-wise



Maintenance Principles

Safety Notice

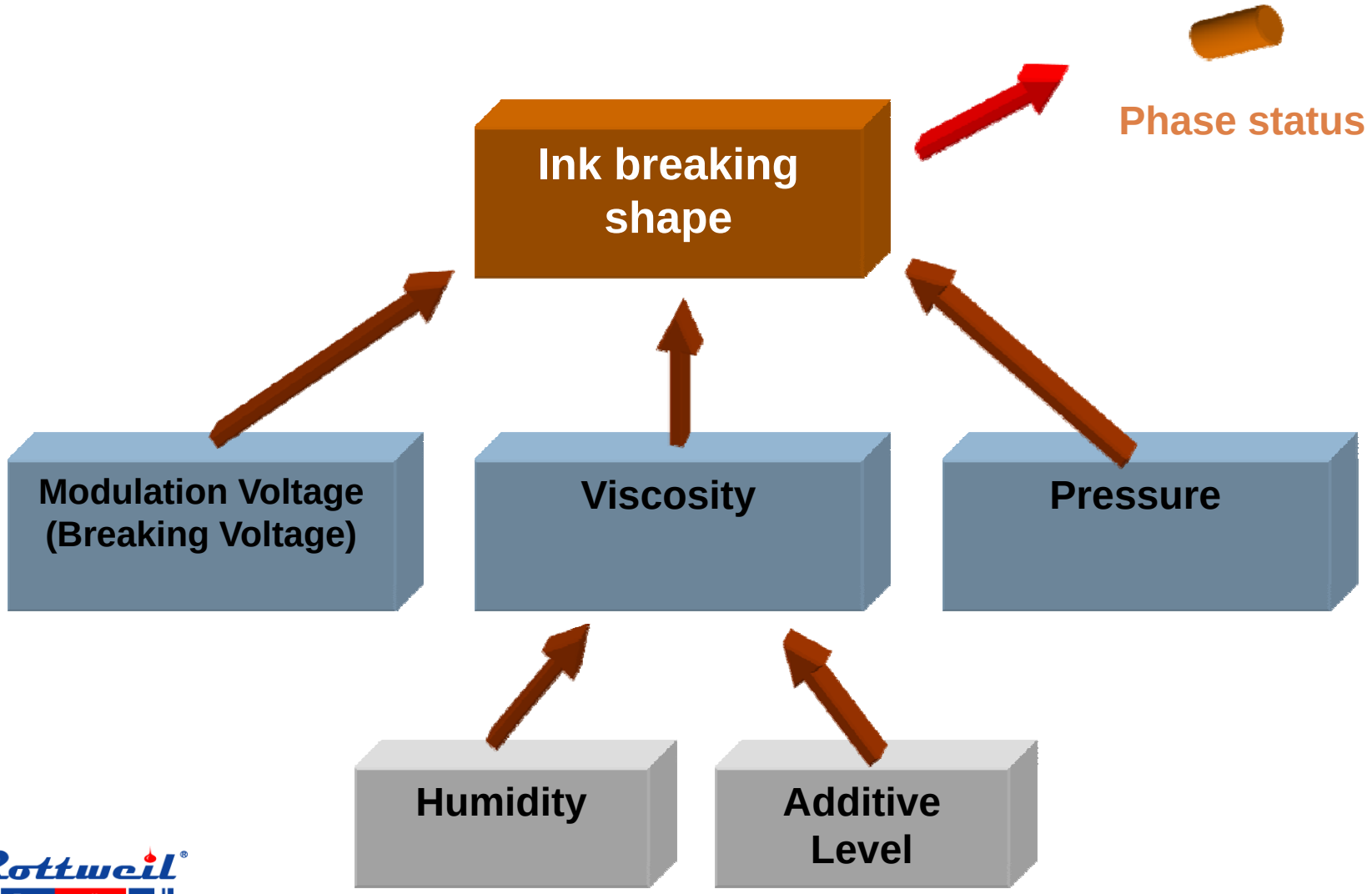
- No smoke.
- Put the printer away from radiation, heat source, fire etc.
- Ink, additive must be sealed and stored away from radiation, heat source, fire etc.
- Use original Rottweil ink and additive.
- Wear protective glass and gloves always in dealing with ink and additive.
- Be aware of the compatibility of electricity supply.
- Follow up the instruction in manual to operate the printer correctly.
- Avoid to shock the print head in daily use. It's fragile.

Daily Checking

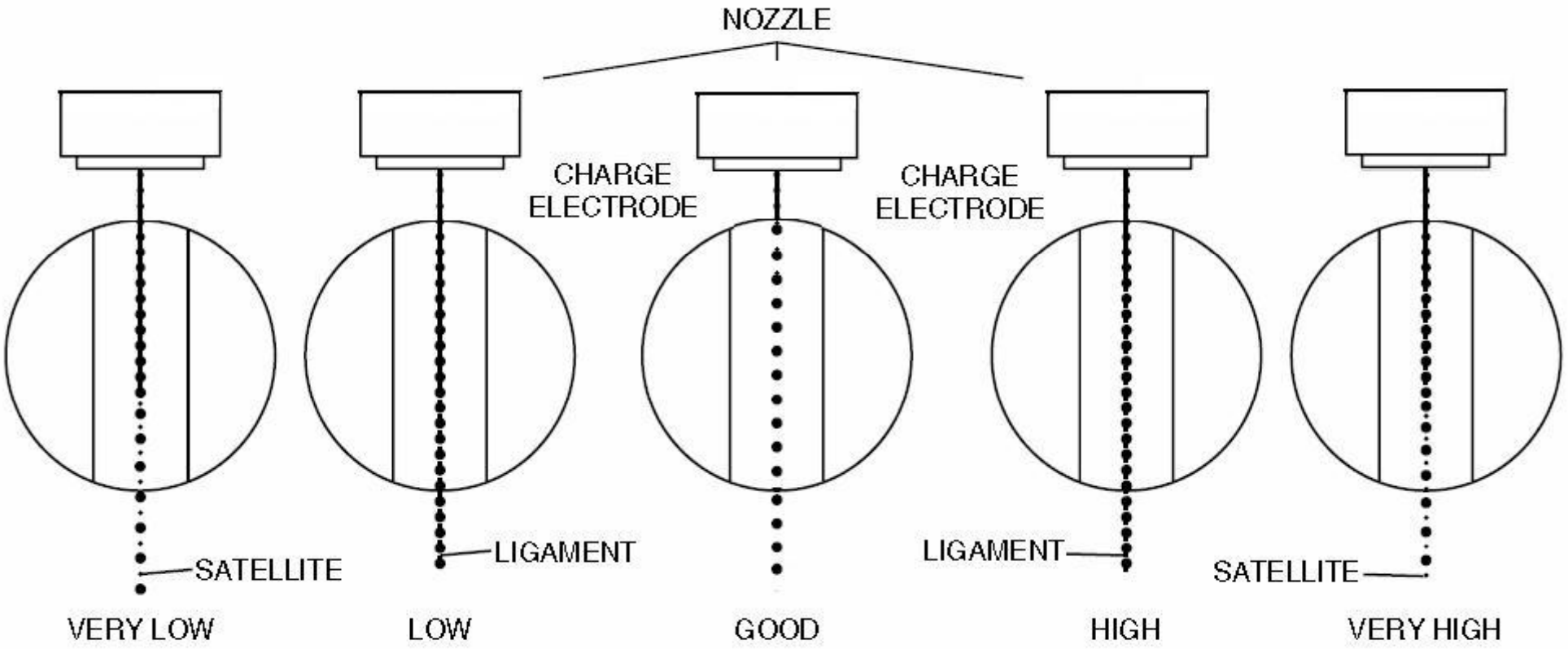
- Power supply plug is in good condition.
- Connection between umbilical and cabinet is in good condition and no leakage.
- Any abnormal, please report to maintenance staff immediately.

- Stop printing, turn off machine and disconnect the power.

Factors may influence the print quality



Ideal ink breaking shape



Maintenance principle – PVM

P—Pressure
V—Viscosity
M—Modulation

- Follow up this sequence in maintenance.
- Make sure pressure is in good condition and check viscosity. Then modulation.

Trouble Shooting

Maintenance – Ink System

Error Description:

No jet after initialization of starting machine.

Possible reasons to cause this problem	Solution
Nozzle clog.	✓ Conduct “Clean nozzle”, “Purge” in FUNCTION. ✓ Dismantle nozzle & clean thoroughly.
V1, ink valve not working properly.	✓ Dismantle & clean thoroughly. ✓ Change.
Abnormal pressure.	✓ Clean ink system. ✓ Clean pressure pump. ✓ See if pressure pump faulty.
Ink system control board faulty.	✓ Diagnose and change the board.

Maintenance – Ink System

Error Description:

Jet out of gutter or poor alignment to gutter after initialization of starting up.

Possible reasons to cause this problem	Solution
Did not clean gutter in turning off machine.	✓ Clean print head and gutter. Keep it clean and dry.
White sealing O-ring faulty led to ink line problem and less flow volume.	✓ Change this O-ring.
Nozzle faulty.	✓ Change nozzle.
Filter clog.	✓ Check the ink quality and prevent ink polluted by dirt. ✓ Change filters.
Not adjusted well of alignment.	✓ Adjust alignment. (The machine is well-adjusted before delivery. But this may be happened in installation due to some unexpected reasons.)
Recycling tube was clog.	✓ In general the recycling of ink sounds louder and clear and no clog during normal working. ✓ After running a while, check recycling, ink breaking shape and alignment. ✓ Clean the tube.

Maintenance – Ink System

Error Description:

Jet can not cut off when shut down machine.

Possible reasons to cause this problem	Solution
V1 not working properly.	✓ Dismantle V1 clean. ✓ Change if faulty.
V5 not working properly.	✓ Dismantle V5 clean. ✓ Change if faulty.
Ink system board faulty.	✓ Change ink system board.

Maintenance – Ink System

Error Description:

Not stable alignment or jet vibrates vertically.

Possible reasons to cause this problem	Solution
Pressure unstable, and viscosity high.	✓ Clean D2 and adjust viscosity.
Main filter clog, and mesh not cleaned for long time.	✓ Change main filter. ✓ Clean mesh paper.
Spring in damper faulty.	✓ Change damper.

Maintenance – Ink System

Error Description:

Jet is always on when conducting “Clean Nozzle”.

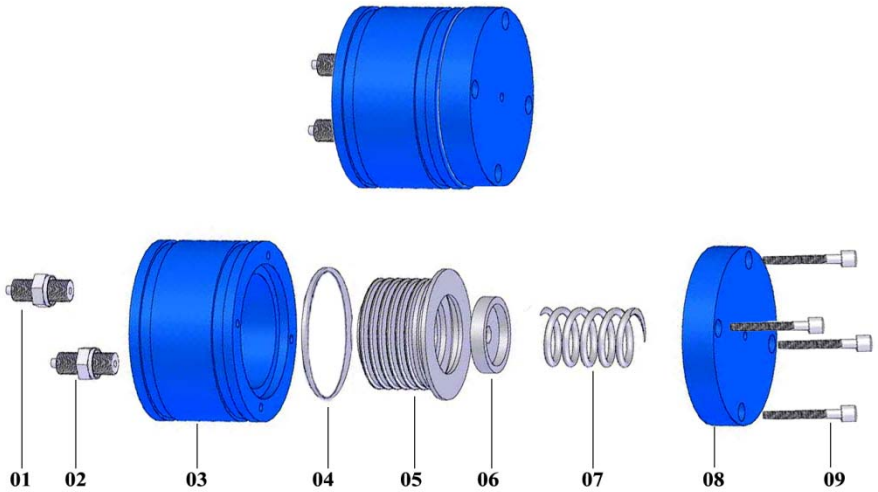
Possible reasons to cause this problem	Solution
V1 not working properly.	✓ Clean V1. ✓ Change V1.
V5 not working properly.	✓ Clean V5. ✓ Change V5.

Maintenance – Ink System

Error Description:

Leakage of ink in damper.

Possible reasons to cause this problem	Solution
Buffer faulty.	✓ Change buffer.
O-ring faulty.	✓ Change O-ring.
Damper faulty.	✓ Change damper.



NO	QTY	Parts No	Description
01	1	BF-01	Protection Mesh Fitting
02	1	BF-02	Restrictor D3
03	1	BF-03	Buffer Cylinder
04	1	BF-04	Buffer Oring
05	1	BF-05	Buffer
06	1	BF-06	Spring Pedestal
07	2	BF-07	Buffer Pressure Spring
08	1	BF-08	Buffer Cover
09	1	BF-09	Cover Bolt

Maintenance – Ink System

Error Description:

Mix tank overflow.

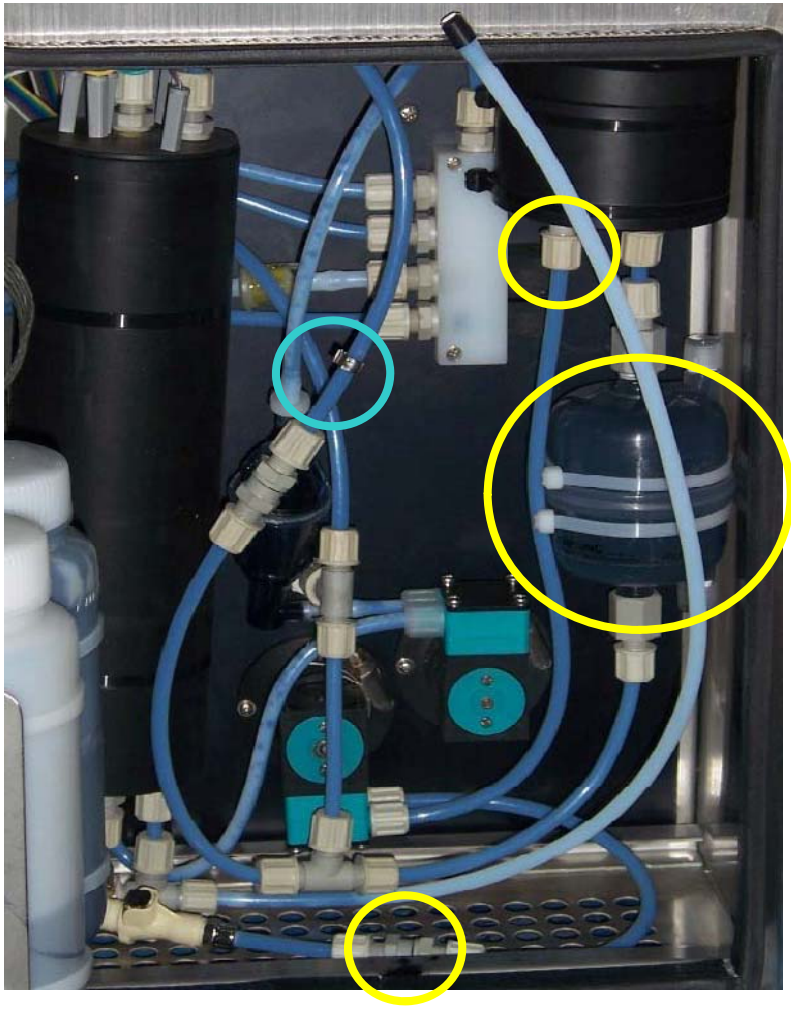
Possible reasons to cause this problem	Solution
Viscosity measuring high and led to continuous adding additive to mix tank.	✓ Drain out ink from mix tank and check viscosity checking is good or not.
Ink add valve not sealed well.	✓ Clean, repair or change.
Additive add valve not sealed well.	✓ Clean, repair or change.
Ink level detective pole faulty.	✓ Repair or change.
Ink system board faulty.	✓ Change.

Maintenance – Pressure Issues

Error Description:

Pressure fluctuating and not stable.

Possible reasons to cause this problem	Solution
Viscosity high; D2 clog or mesh clog.	✓ Check V3 additive add valve is good or not. ✓ Clean D2 and mesh.
Main filter clog.	✓ Change main filter.



Maintenance – Pressure Issues

Error Description:

Pressure value no display or very low pressure value displayed.

Possible reasons to cause this problem	Solution
D3 clog. (pressure pump not working or works a little while and then stops.)	✓ Clean D3, or change. (Need to wear protective glass and gloves, only wait till no pressure in ink system.)
Diaphragm faulty or bearing/motor faulty in pressure pump, due to overload of working.	✓ Change diaphragm or bearing, even new pump.
Pressure transmitter clog. (display very low pressure value)	✓ Clean pressure transmitter and three-way fittings.
Pressure transmitter faulty. (Ink is flowing in ink system, jet can be on, pressure transmitter has DC12V input.)	✓ Change new pressure transmitter.
Ink system board faulty. (No DC12V output for pressure transmitter.)	✓ Change ink system board.

1&3:12V

2&3:2-5V

Rottweil Easy coding

Maintenance – Pressure Issues

Error Description:

Pressure value low.

Possible reasons to cause this problem	Solution
Needle inside D2 restrictor is loosen.	✓ Clean D2 and re-insert the sticker or change new sticker/new D2.
Inlet tube to the pressure pump clog. (quick coupling socket not connected well. Mesh in inlet tube to the pressure pump not cleaned regularly.)	✓ Check quick coupling socket connection and clean mesh in this circuit.
One-way valve of pressure pump work improperly.	✓ Clean or change.
Low ink level or no ink in mix tank.	✓ Add ink manually. ✓ Check ink bottle ink level. ✓ Check V2 ink add valve.
Ink suck back valve V5 works abnormal. (check the ink flow volume of suction in gutter. High volume indicates not close thoroughly of V5.)	✓ Clean V5. ✓ Change V5.

Maintenance – Pressure Issues

Error Description:

Pressure value too high.

Possible reasons to cause this problem	Solution
D2 clog or mesh clog.	✓ Clean D2 and mesh.
Pressure transmitter faulty. (jet can be on, ink breaking shape is good, and can print.)	✓ Change pressure transmitter.
Ink system board faulty.	✓ Change ink system board. Machine on.

Maintenance – Pressure Issues

Error Description:

Pressure pump not work.

Possible reasons to cause this problem	Solution
Inlet or outlet circuit of pressure pump clog. (dismantle the pressure pump and connect with power directly to check pump can work or not.)	✓ Clean the inlet and outlet if pressure pump is working.
Pressure pump faulty. (Turn off machine. Dismantle the wiring from pressure pump motor and measure the resistance value of the motor. If no resistance value or too low value, which indicates motor faulty.) 7.9	✓ Change pressure pump.
Ink system board faulty. (Dismantle the wiring from motor and measure input of power from board. If no input, board faulty.)	✓ Change ink system board.

Maintenance – Suction Issues

Error Description:

No suction or poor suction.

Possible reasons to cause this problem	Solution
Ink/additive bottle fluid level low.	✓ Refill ink/additive to the bottles.
Gutter or suction tube clog.	✓ Clean gutter and suction tube. ✓ Inject additive when shut down machine for daily maintenance.
Not sealed well in suction circuit, which led to poor efficiency of suction.	✓ Check the sealing of suction circuit.
SUCTION set value too low.	✓ Increase this value in menu accordingly.
Suction pump works improperly.	✓ Repair or change.
Ink system board faulty.	✓ Change.

Maintenance – Suction Issues

Error Description:

No ink added into ink system.

Possible reasons to cause this problem	Solution
Ink add valve V3 works abnormal.	✓ Clean or change.
Ink filters clog.	✓ Change.
No suction.	✓ Check ink system and suction pump.
Ink system board faulty.	✓ Change.

Maintenance – Suction Issues

Error Description:

No additive added into ink system.

Possible reasons to cause this problem	Solution
Additive add valve V2 works abnormal.	✓ Clean or change.
Additive filter clog.	✓ Change.
No suction.	✓ Check ink system and suction pump.
Ink system board faulty.	✓ Change.

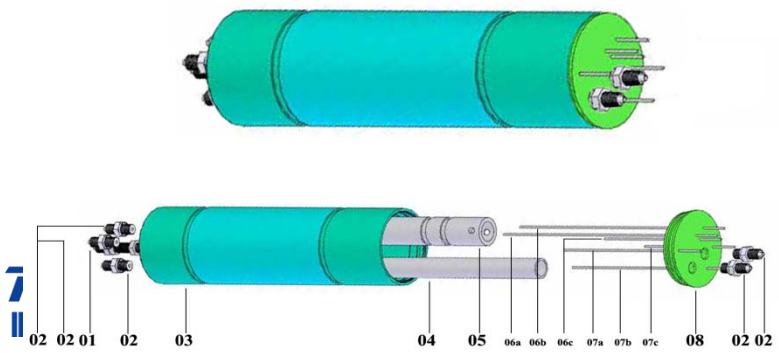
Maintenance – Viscosity Issues

Error Description:

No measuring of viscosity.

Possible reasons to cause this problem	Solution
D1 clog.	✓ Clean or change.
D2 clog or mesh before D2 clog.	✓ Clean or change.
Measuring needle rotted in mix tank.	✓ Change needle or mix tank.
No ink level change in mix tank.	✓ Repair or change mix tank.
Ink system board faulty.	✓ Change ink system board.

MIXING TANK ASSEMBLY



NO	QTY	Parts No	Description
01	1	MT-01	Restrictor D2
02	1	MT-02	Fitting (1/8" X 6 mm)
03	1	MT-03	Mixing Tank
04	1	MT-04	Viscosity Measuring Cylinder (Inlet)
05	1	MT-05	Viscosity Measuring Cylinder
06	1	MT-07a	Ink Level Needle (GND)
07	1	MT-07b	Ink Level Needle (Lower)
08	1	MT-07c	Ink Level Needle (Upper)
09	1	MT-06a	Viscosity Level Needle (GND)
10	1	MT-06b	Viscosity Level Needle (Lower)
11	1	MT-06c	Viscosity Level Needle (Upper)

Maintenance – Viscosity Issues

Error Description:

Viscosity not stable, fluctuated.

Possible reasons to cause this problem	Solution
D2 clog or mesh before D2 clog.	✓ Clean or change.
Pressure not stable	✓ Clean the ink system and all mesh. ✓ Change main filter.
Ink dry in mix tank.	✓ Clean mix tank in a regular base.
Ink system board faulty.	✓ Change.

Maintenance – Ink Breaking Drop Issues

Error Description:

Not desirable ink breaking drop.

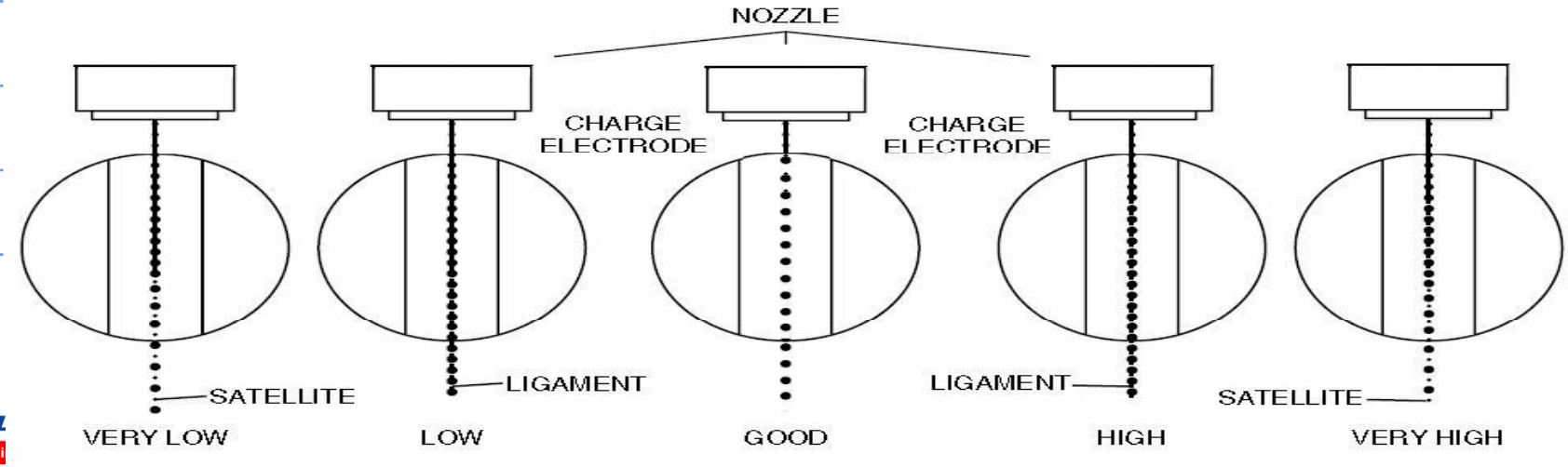
Possible reasons to cause this problem	Solution
Not well modulation adjusted.	✓ Re-adjust modulation in “PHASE” page.
Teflon Oring being flat	✓ Change.
Nozzle not working well.	✓ Clean nozzle or change.
Viscosity out of normal range +/-50	✓ Normally will get to balance automatically. Change “Visco-Offset”. ✓ +/-50 gives service light. +/-100 gives error light.
Resonator wiring not good.	✓ Check and re-connect the wiring of resonator.
Resonator not good.	✓ Change.
Print board faulty.	✓ Change.

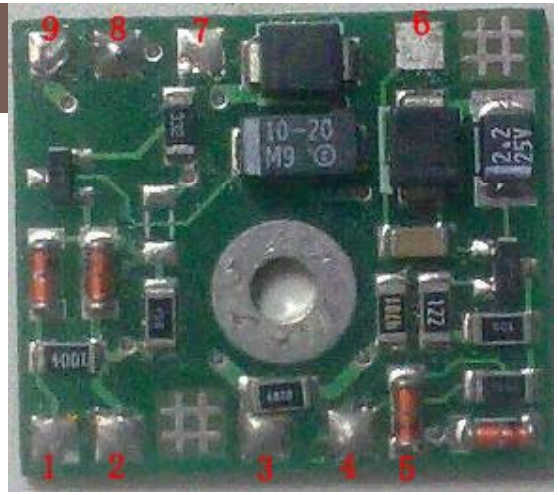
Maintenance – Ink Breaking Drop Issues

Error Description:

No ink breaking drop, jet is a line.

Possible reasons to cause this problem	Solution
Resonator not good or broken.	✓ Change.
Resonator wiring off.	✓ Re-connect by melting.
Print board faulty, no resonator output.	✓ Change print board.





Maintenance – Phase Issues

Error Description:

Phase not stable.

Possible reasons to cause this problem	Solution
Ink breaking drop not good.	✓ Re-adjust ink breaking drop.
Bad ink quality.	✓ Change ink.
Dirty or electricity leakage on upper deflection electrode.	✓ Clean or change upper deflection electrode.
Not good charging.	✓ Check charging resistance and charging electrode.
Amplifying board faulty. (check pin 4 & 5, get 1.1MOH indicates this board is good.)	✓ Change amplifying board.
Print board faulty.	✓ Chang print board.

Maintenance – Phase Issues

Error Description:

No phase.

Possible reasons to cause this problem	Solution
Amplifying board faulty. (Shut down machine. Use multi-measurer measures checking port resistance is about 1.1M. If measuring value is far more than this value, amplifying board faulty.)	✓ Change amplifying board.
Print board faulty. (RW-C: use hand to touch upper deflection electrode and check if the phase is all stars, this means print board is ok. RW-F: needs magnet in checking.)	✓ Change.
No charging voltage.	✓ Check 16K resistor is connected well or not. ✓ During printing, measure if J2 four pins of print board, has DC3-5V. If no, print board faulty.
Print head not grounded.	✓ Check grounded.

Maintenance – Display Issues

Error Description:

Screen in black.

Possible reasons to cause this problem	Solution
Power supply abnormal.	✓ Check power and must have UPS.
Got a touch screen back light but display screen is in black. Core-Arm Card not well connected or faulty.	✓ Re-connect Core-Arm Card or change it.
Connection between CPU board and touch screen not good.	✓ Re-connect with that connecting ribbon.
No back light. Touch screen or CPU board faulty.	✓ Change.

Maintenance – Display Issues

Error Description:

Screen display is flashing.

Possible reasons to cause this problem	Solution
Insufficient power supply.	✓ Check power supply and must use UPS.
Not well connected between CPU board and touch screen.	✓ Re-connect or change connecting ribbon.
Transformer of CPU board leakage or faulty.	✓ Change CPU board.

Maintenance – Printing Issues

Error Description:

Ink leakage from print head, when close print head.

Possible reasons to cause this problem	Solution
Print head dirty, charging electrode got dry ink.	✓ Clean print head and charging electrode. ✓ Keep print head clean and dry.
Pre-charging is high.	✓ Adjust.
16K charging resistance disconnected or burned.	✓ Check and change if necessary.
Print board faulty.	✓ Chang print board.

Maintenance – Printing Issues

Error Description:

Poor print quality, some dots flying.

Possible reasons to cause this problem	Solution
Print head dirty, not clean regularly.	✓ Clean print head and keep it clean and dry.
Nozzle clog and not good alignment.	✓ Clean nozzle and adjust alignment.
Pressure and viscosity out of range.	✓ Clean ink system. ✓ Change new ink.
Bad ink breaking drop. Modulation not good.	✓ Adjust modulation.
Phase not good.	✓ Adjust phase/modulation.
Print board faulty.	✓ Change print board.

Maintenance – Printing Issues

Error Description:

Gutter accumulated ink/dry ink.

Possible reasons to cause this problem	Solution
Bad alignment.	✓ Adjust ink position into gutter/Alignment.
Pressure setting value too high.	✓ Reduce pressure setting value properly.
“Charge Offset” setting value needs to be adjusted.	✓ Increased this value properly.
HV value too low.	✓ Increase HV value properly.
Phase/modulation not good.	✓ Adjust properly.

Maintenance – Printing Issues

Error Description:

Upper deflection electrode got ink/dry ink.

Possible reasons to cause this problem	Solution
Bad alignment.	✓ Adjust ink position into gutter/Alignment.
Pressure setting value too low.	✓ Increase pressure setting value properly.
“Charge Offset” setting value needs to be adjusted.	✓ Reduce this value properly.
HV value too high.	✓ Reduce HV value properly.
Phase/modulation not good.	✓ Adjust properly.

Maintenance – Printing Issues

Error Description:

COM2 communication error.

Possible reasons to cause this problem	Solution
Illegal text, stored in memory.	✓ Delete all text and re-edit text.
Illegal configuration, stored in memory.	✓ Delete all configuration and build new configuration.
Illegal text name or logo name.	✓ Delete this text or this logo.
Core-Arm Card program problem.	✓ Upgrade software/re-load software.
Core-Arm Card faulty.	✓ Change it.

Maintenance – Printing Issues

Error Description:

Loading new configuration failed.

Possible reasons to cause this problem	Solution
Illegal configuration.	✓ Build correct configuration and be aware of all settings in it.
Not completion of previous task.	✓ Reboot machine.
Print board faulty.	✓ Change print board.

Maintenance – Printing Issues

Error Description:

Counter resets to zero automatically when printing.

Possible reasons to cause this problem	Solution
Grounded not well.	✓ Make sure well grounded.

Maintenance – Printing Issues

Error Description:

No print while counter is counting.

Possible reasons to cause this problem	Solution
Upper deflection electrode electricity leakage.	✓ Clean upper deflection electrode or change it.
No HV output.	✓ Check 180M high voltage resistor, high voltage board. If faulty, change.
Use up-down, over 32 dots	✓ Do not use up-down over 32 dots, incl. 32 dots

Maintenance – Printing Issues

Error Description:

Print width is not ideal, very narrow print.

Possible reasons to cause this problem	Solution
Auxiliary equipment working too slow.	✓ Increase the auxiliaries working speed.
“Ink drop” set value too small.	✓ Increase “Ink drop” value properly.
“Character width” set value too small.	✓ Increase “Character width” value properly.
“Print Mode” wrong selected.	✓ Change “Print Mode”. (HISP/STAD/GRAF)

Maintenance – Printing Issues

Error Description:

Print width is not ideal, very widen print.

Possible reasons to cause this problem	Solution
Auxiliary equipment working too fast.	✓ Reduce the auxiliaries working speed.
“Ink drop” set value too big.	✓ Reduce “Ink drop” value properly.
“Character width” set value too big.	✓ Reduce “Character width” value properly.
“Print Mode” wrong selected.	✓ Change “Print Mode”. (HISP/STAD/GRAF)

Maintenance – Printing Issues

Error Description:

Printing subject was missed when continuous print, triggered by sensor.

Possible reasons to cause this problem	Solution
Photo sensor position not well installed.	✓ Adjust the sensor position to make sure it can sense all subjects which is moving on conveyor. ✓ Need to install sensor arm to remove the influence by package color or uneven surface.
Photo sensor sensitivity.	✓ Adjust the sensitivity of sensor.
Fiber sensor faulty. (if use fiber sensor instead of normal photo sensor.)	✓ Clean the fiber sensor. ✓ Good fiber sensor, when look through it to the sun, it should be very clean light
Printing subjects not stable on conveyor.	✓ Make the line stable to ensure the sensitivity.


1. New arm includes:
-One sensor,
-One blue flexible arm,
-One holder for arm & print head.
2. Installation guidance:
a. Take off previous holder.
b. Use new holder and arm.
c. Install print head.
d. Rotate arm to bend sensor in this direction.
e. Use Ps-Continuous trigger mode.
f. Set delays and RePriNum.
Rottweil
NOTE: This is optional part.
Set SEGMENT DELAY
to adjust this distance.
Set REPRINTNUM for the
number of continuous package.
Set PRINT POSITION
in CONFIG to adjust
this distance.

Maintenance – Printing Issues

Error Description:

Printer is in good condition but can not print.

- Check “Print Menu” to enable printing.
- Load the text again. Check “Print Position”.
- Check trigger mode, sensor or encoder etc.
- Check the sensor/encoder working well or faulty.

Error/Faulty Analysis

Error/Faulty Description:

Not ideal print position on print subject.

- Check “Print Position”, “Interval. Delay” set value.
- Check photo sensor（**NPN**） installation and position. Use sensor arm if necessary.

Error/Faulty Analysis

Error/Faulty Description:

Not ideal print size on print subject.

- Check the distance from print head to print surface. Ideally should be 5mm~18mm.
- Check the fonts in text if the correct or ideal fonts.
- Check set value of “Character Width”.
- Check photo sensor installation and position. Use sensor arm if necessary.
- Change print height if necessary. Adjust HV value. Clockwise increase, anti-clockwise reduce.

Error/Faulty Analysis

Error/Faulty Description:

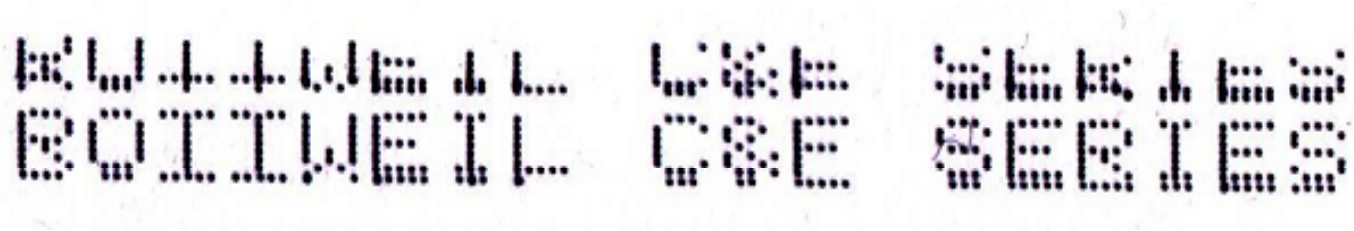
Printing was missing partially.

- Check the gutter clean or not.
- Keep the print head dry and clean.
- Increase “Charge Offset” if necessary.
- Check HV value.

Error/Faulty Analysis

Error/Faulty Description:

Phase not good. Print not good. Lot of ink splashes.



- Check modulation/phase value.
- Not good ink breaking shape. Too many satellite drops.
- Not good charging.

Error/Faulty Analysis

Error/Faulty Description:

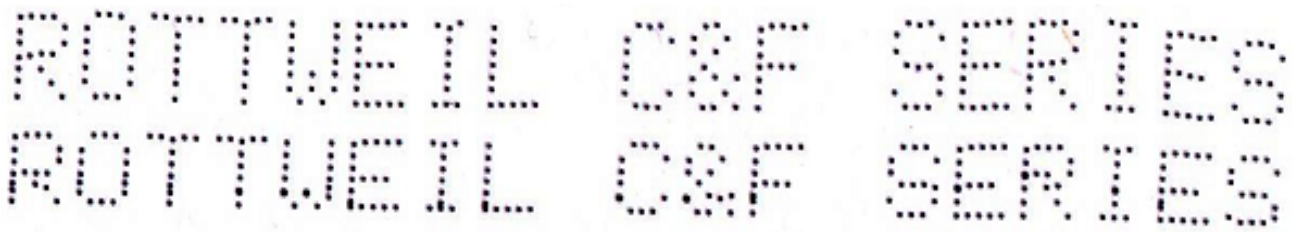
Print height too short. Too small printing.

- Check “Pressure” set value. Too high.
- Check the forth port of J2, on Print Board. To check the charging.

Error/Faulty Analysis

Error/Faulty Description:

Printing of some dots are missing.



- Check “Pressure” set value. Too low.
- Check the forth port of J2, on Print Board. To check the charging.

Error/Faulty Analysis

Error/Faulty Description:

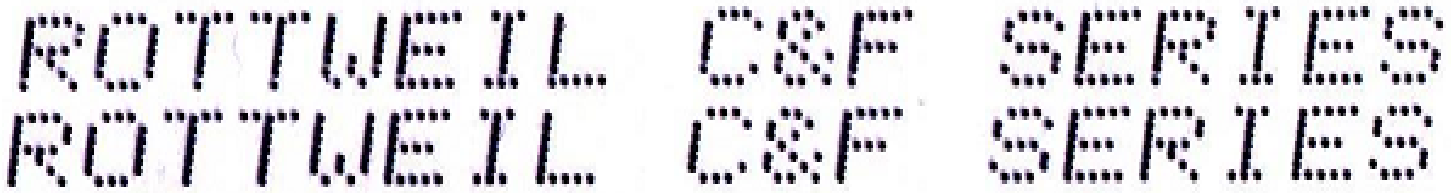
Printing was influenced by wind blowing.

- The distance from print head to printing surface are too big.
- Make it shorter.

Error/Faulty Analysis

Error/Faulty Description:

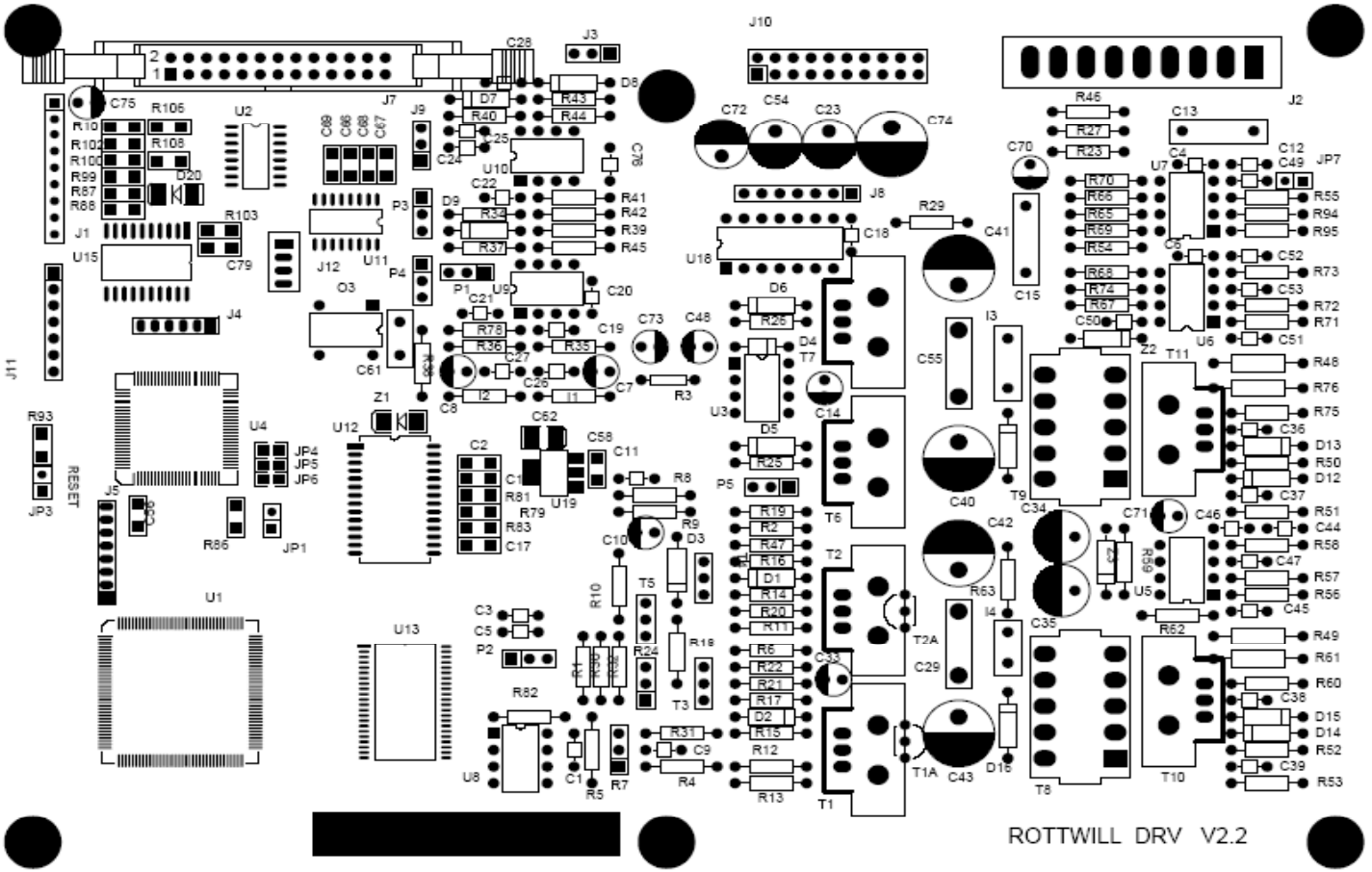
Printing not straight, little italic.



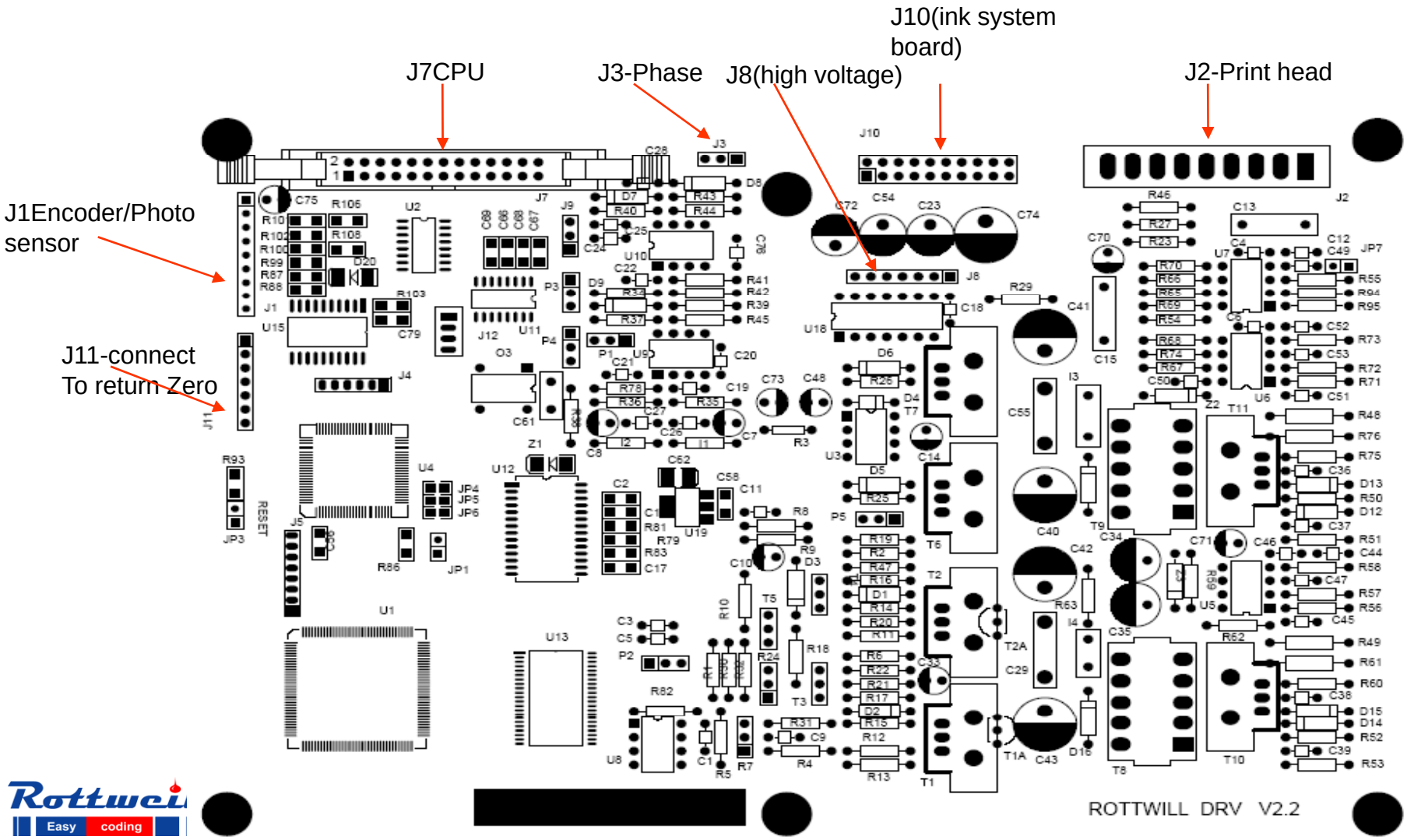
- Adjust the print head position to the moving direction.

Electrical Boards

Print Board



Print Board


J7CPU
J3-Phase
J8(high voltage)
J10(ink system board)
J2-Print head
J1Encoder/Photo sensor
J11-connect To return Zero
ROTTWILL DRV V2.2

Print Board

J1

No:	
1	12Vdc
2	None
3	Encoder Phase A
4	Encoder_ Phase A
5	Encoder Phase B
6	Encoder_ Phase B
7	Photo sensor input
8	None
9	Grounding

J2

No:	
1	Resonator voltage
2	Grounding
3	Grounding
4	Charge output
5	LED
6	LED
7	None
8	Hall input
9	12Vdc

J3

No:	
1	Grounding
2	Phase signal
3	Grounding

J8

No:	
1	24Vdc
2	24Vdc
3	HV time out put
4	HV pulse output
5	12Vdc
6	Grounding
7	Grounding

J11

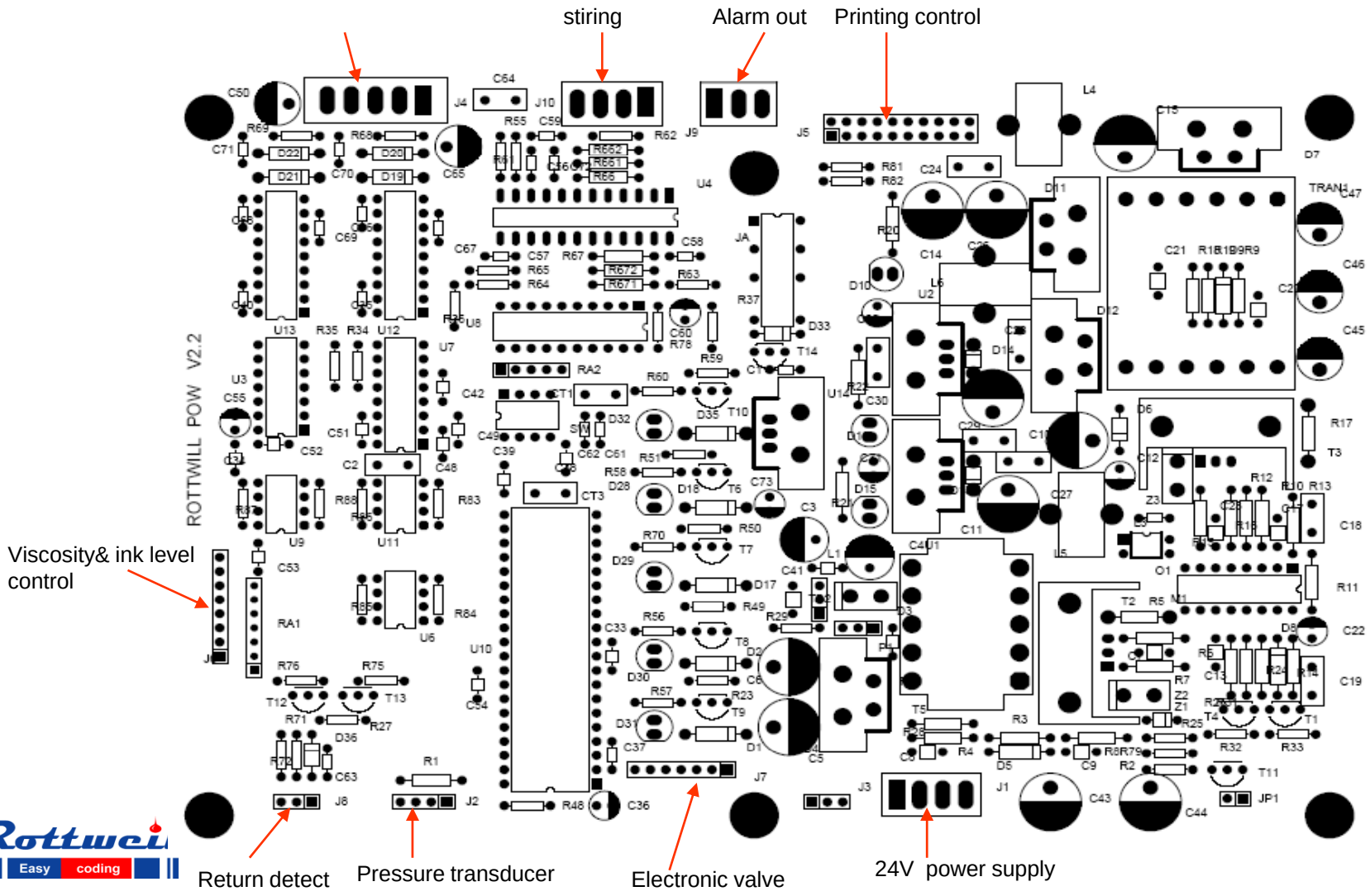
No:	
1	None
2	None
3	None
4	None
5	None
6	Return Zero
7	Grounding

Print Board

	MEASURE PIN	ADJUSTMENT	FUNCTION	
P2	U8, 5th pin	Resistance to 0.55K	Charging range adjustment	
R7	R7, 1th, 3rd pin	Resistance to 1.90K	Square-wave form adjustment	
R24	R24, 1th, 3rd pin	Resistance to 1.41K	Charging ZERO adjustment	
P5	P5, 1th, 3rd pin	Resistance to 6.1K	Pre-charging range adjustment	Clock-wise, decrease;
P3	P3, 1th, 3rd pin	Resistance to 8K	Phase adjustment	Anti-clock-wise, increase.

* When turn on the machine, measure charging voltage at R24 at 0.5V.

Ink System Control Board



Ink System Control Board

J1

No:	
1	Groundin g
2	None
3	None
4	+24V input

J4

No:	
1	Pressure pump-
2	Pressure pump+
3	None
4	Suction pump+
5	Suction pump-

J6

NO	
1	Viscosity low
2	Viscosity high
3	None
4	Ink level low
5	Ink level high
6	None
7	Viscosity ground
8	Ink level ground

J7

No:	
1	V1&V5 Grounding
2	V2&V3 Grounding
3	None
4	V1,+24V
5	V2,+24V
6	V3,+24V
7	V5,+24V

J9

No:	
1	common
2	NC
3	NO

J10

No:	
1	A+
2	B+
3	A-
4	B-

J2

No:	
1	12Vdc
2	Pressure signal input
3	None
4	Groundi ng

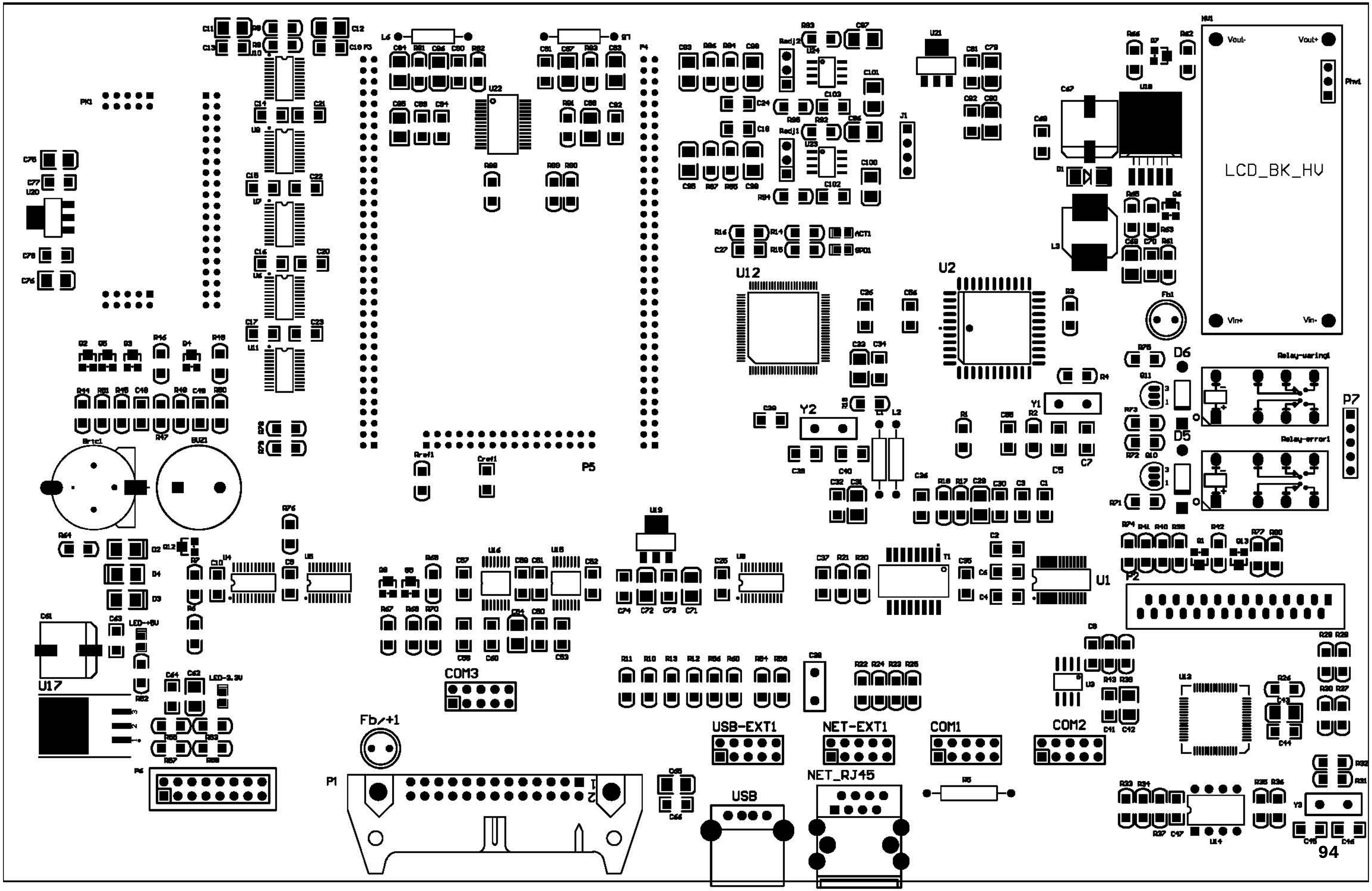
J8

No:	
1	Ink flow signal input
2	
3	HV signal input

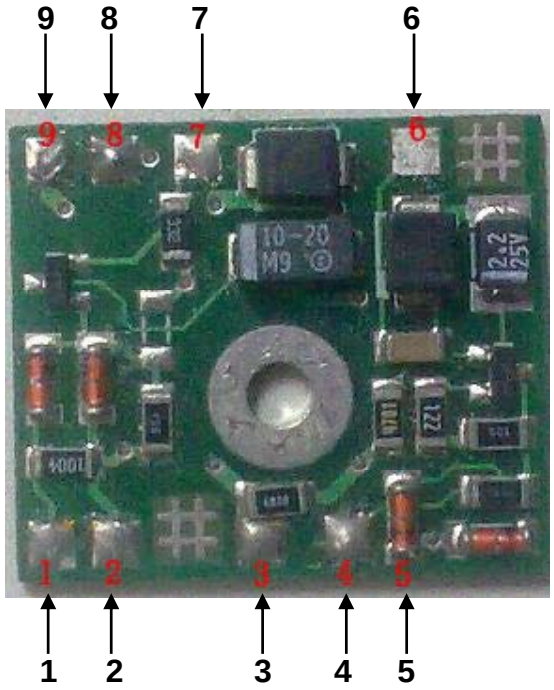
LED

LED	
D32	V5
D28	V3
D29	V2
D30	V1

CPU board


LCD_BK_HV
U12
U2
U17
P1
P2
P5
P7
Y1
Y2
D5
D6
U1
COM1
COM2
COM3
USB-EXT1
NET-EXT1
NET_RJ45
USB
Fb/+1

Amplifying board, print head



PINS FOR CHECKING

1&2：HV sensor

3:+12V

4&5:Phase signal input

6:Phase signal output

7:HV error signal output

8:Hall sensor grounding

9:Hall sensor +12V