Turbo 165 Pad Printer Machine Operation Manual

Serial No.:

INDUSTRIAL PAD PRINTING SUPPLIES, S. DE R. L. MI.

KENT INTERNATIONAL

Content

INTRODUCTION

The following manual will familiarize you with the setup, use and maintenance of your printer. Please note that the diagrams shown within this manual are not to scale, and may not show all details.
We would like to draw your special attention to the following notes:

⚠WARNING

It is the operator's responsibility to comply with the following safety instructions to prevent any personal injury.

1. Please disconnect the main power supply before attempting any machine maintenance. Foot-switch or side doors is to stop machine for adjustment only.
2. The air pressure must be released before attending to any service inside the machine or any moving accessories.
3. Always use the emergency stop switch to stop the machine in an emergency. The foot switch is used for normal operations only.
4. Guards CANNOT be removed when machine is in operation.

We have used the followings signs to show special dangerous situations:


Warning!


Electrical Warning!


Warning - Danger of Fire!


Warning -
Danger of hands being crushed while working on pneumatic elements!


Warning -
Do not smoke while working on the machine!

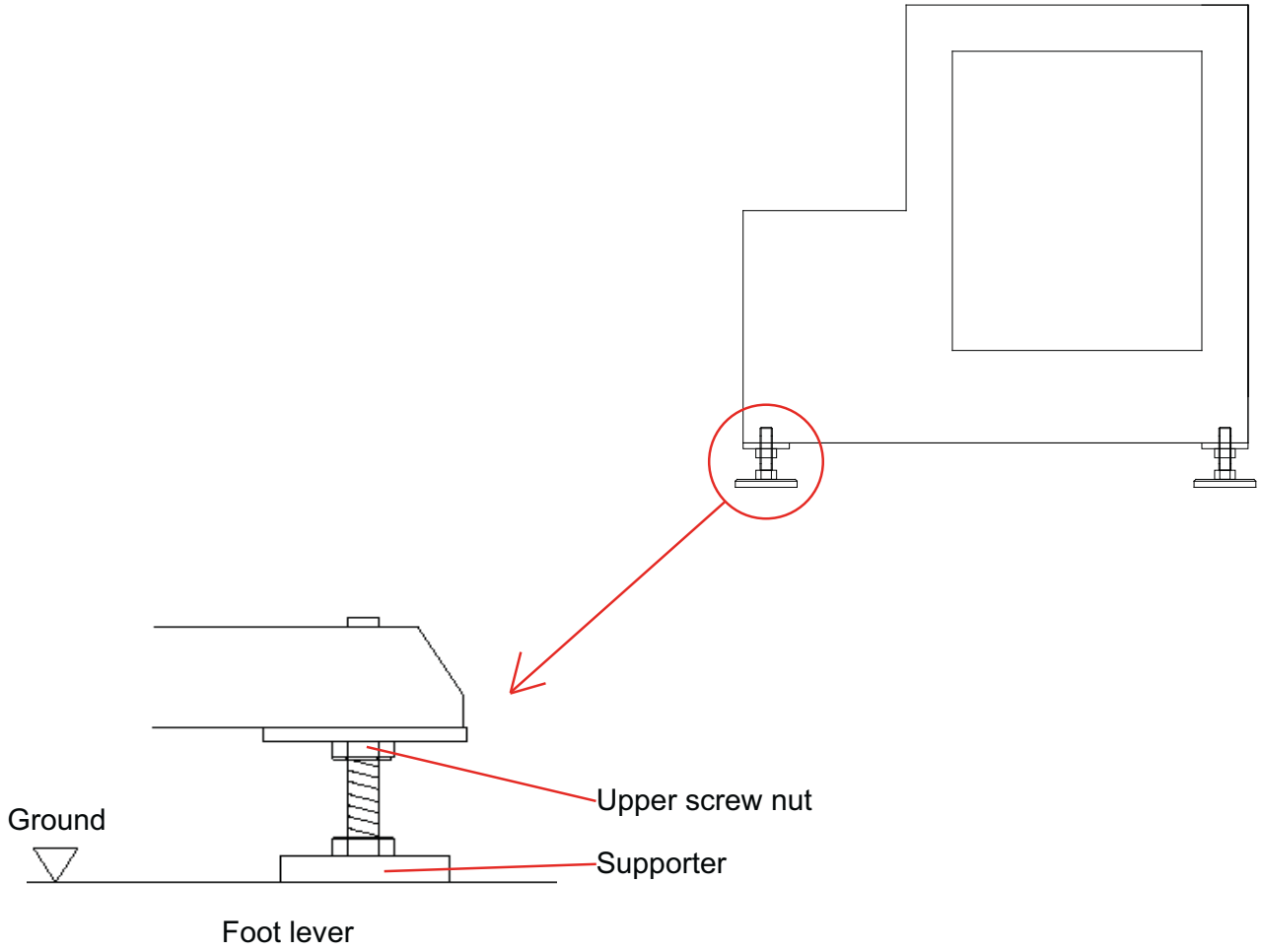
Symbol to identify earth ground terminals.

Installation

Mechanical Part:

Machine Standing Horizontal Adjustment:
Place machine on flat place. If not, you need to adjust machine foot levers to adjust machine level:

1. Place level scale on ink cup platform of machine to survey machine horizontal.
2. Release upper screw nut of foot lever.
3. Turning foot lever supporter up or down to adjust supporting level.
4. Tighten upper screw nut to fix supporter position.

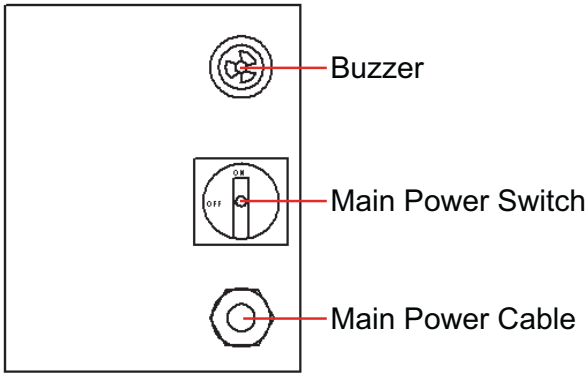


Remark:

- Machine should be located where is
  - with good ventilation
  - not damp and wet
  - without combustible and corrosive gases
- Machine should be kept away from the wall at least 600mm, facilitate operation of the control panel and servicing purpose.
- Machine should have at least 600mm space with any other equipment.

Installation

Electrical Part:



Printer Rear Control Panel
(LHS of printer)

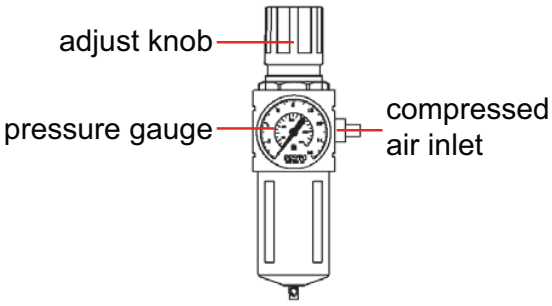
External Ground Terminal
(at the rear of machine body)

- Plug in the main power cable with correct power plug to main power connector. Machine is suitable for 220V AC power supply.
- External grounding wire connection is recommended.

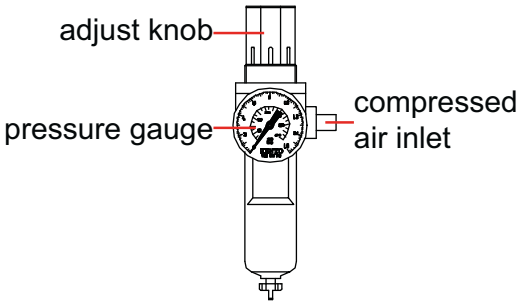
WARNING

- The ground lead of power plug must be wired correctly.
- All external flexible cables should be run in conduits as not to present a tripping hazard.

Pneumatic Part:



Main Service Unit
(at the rear of machine body)



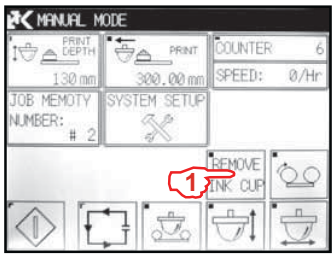
Service Unit For Air Blower
(at the rear of machine body)

- Connect the compressed air line to machine service unit. **(Please use only clean and dry air)**
- Set pressure of main service unit for machine operation to 5-6 bar by turning adjust knob. Pressure gauge shows machine pressure.
- Set pressure for air blower as needed. 1-2 bar is recommended.

Machine Setup

Ink Cup Installation:

1. Go to Main Printing Screen (see page 5.2 for reference) and press REMOVE INK CUP function key once, to extend ink cup platform outward, and stay pad carriage at the front. The key will be highlighted.



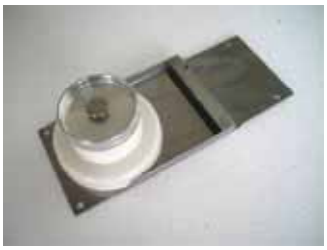
Main Printing Screen

2. Cover ink cup by aluminum printing plate upside down.

3. Insert ink cup setup unit into printing plate with ink cup and then turn it upside down.

ink cup setup unit

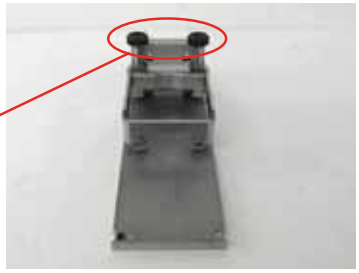
insert setup unit into printing plate



turn upside down

4. Move ink cup holder to back side. Release ink cup holder swing arm locks and lift up swing arm.

swing arm locks



ink cup swing arm

Machine Setup

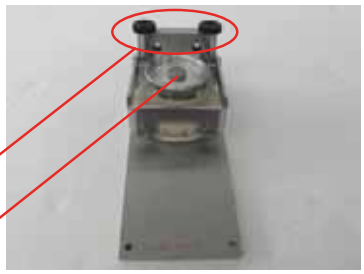
Ink Cup Installation:

5. Place ink cup setup unit with ink cup and printing plate on ink cup platform. Buckle rear hole of plate with rear registration pin of platform.

6. While slide ink cup setup unit out, put hand on ink cup top to stay it on plate. Buckle front hole of plate with front registration pin of ink cup platform.

7. Push ink cup against the internal back side of the ink cup holder. Then pull down the swing arm and tighten swing arm locks.

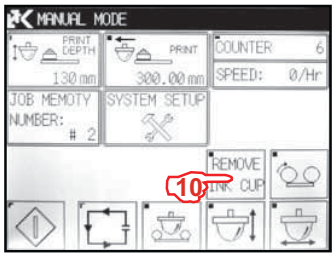
8. Release bleeding screw of ink cup.



9. Use allen key to adjust ink cup holder pads position. (This step apply for first setup of new ink cup holder)

Ink Cup Installation:

10. Press REMOVE INK CUP key again to return the platform back.

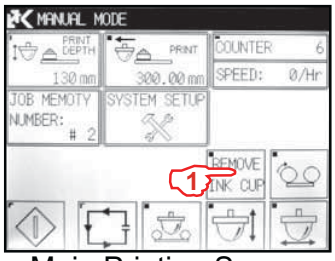


Main Printing Screen

Machine Setup

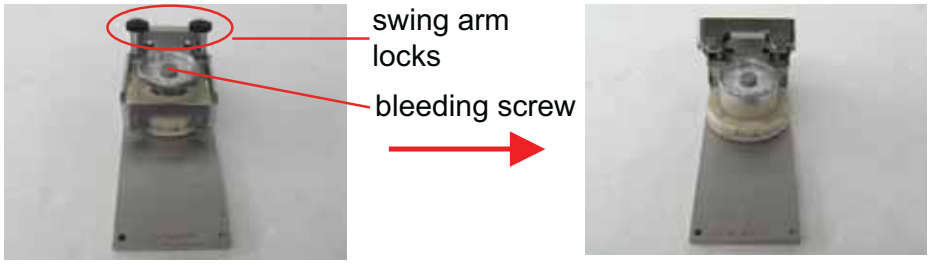
Ink Cup Removal:

1. Go to Main Printing Screen (see page 5.2 for reference) and press REMOVE INK CUP function key once, to extend ink cup platform outward, and stay pad carriage at the front. The key will be highlighted.

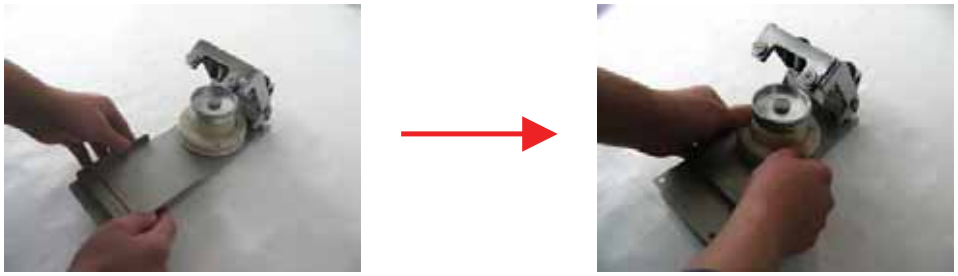


Main Printing Screen

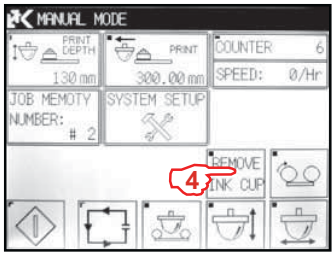
2. Tighten ink cup bleeding screw. Release swing arm locks of ink cup holder and lift up swing arm.



3. Lift up the front side of printing plate. Insert ink cup setup unit between ink cup platform and plate. Push it forward to against rear registration pin. Remove the thin printing plate and ink cup with ink cup setup unit.



4. Press REMOVE INK CUP key again to return the platform back.



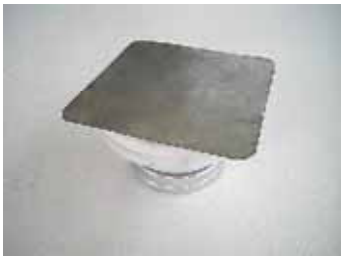
Main Printing Screen

Ink Cup Removal:

5. Hold the ink cup, turn ink cup over and then remove ink cup setup unit and printing plate.

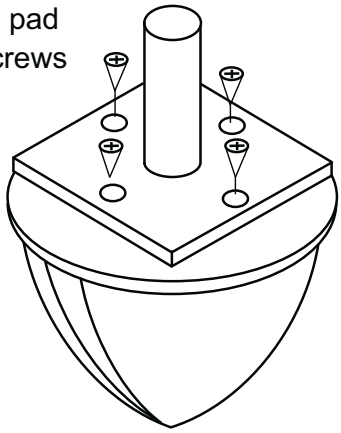
6. Clean the ink cup ring and then cover it well.

7. Use thinner to clean the printing plate and backup steel plate. Apply grease on backup plate surface to prevent oxidation.

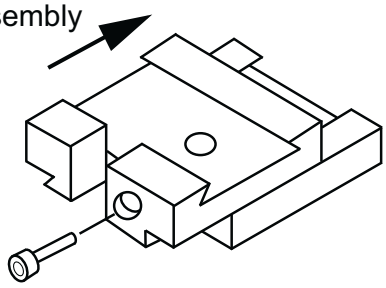


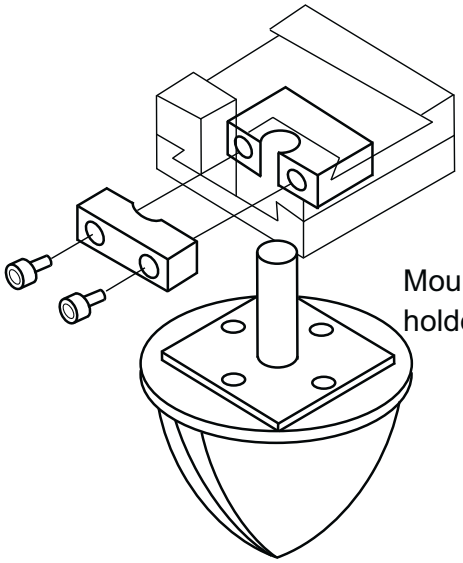
Printing Pad Setup:

Fasten pad to pad holder by 4 screws

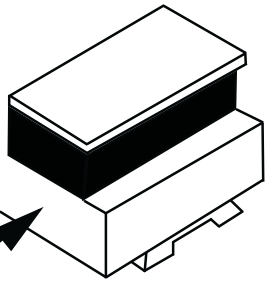


Pad holder assembly

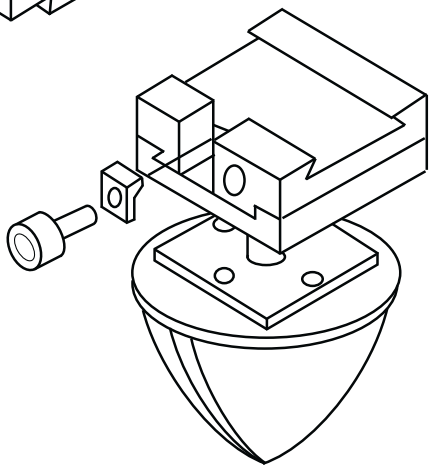




Mount pad with holder to pad assembly



X slide



Slide pad assembly to X slide, Adjust pad X-axis and Y-axis position and then tighten locking screws.

Machine Setup

Pad Clean Tape Setup:

Steps:

1. Turn machine power off.

2. Open safety doors.

3. Insert new tape roll onto tape mounting without motor.

4. Insert tape roll empty core onto tape mounting with motor.

5. Pull tape from the new tape roll and through the pad clean tape platform.
   The sticky side of tape faces upward.

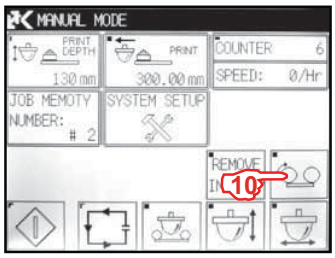
6. Pull the tape out from the other side of the platform.
   Stick the tape end onto the empty core outside.

7. Close safety doors.

8. Turn machine power on.

9. Start machine up as Section "Machine Start Up" at page 5.1.

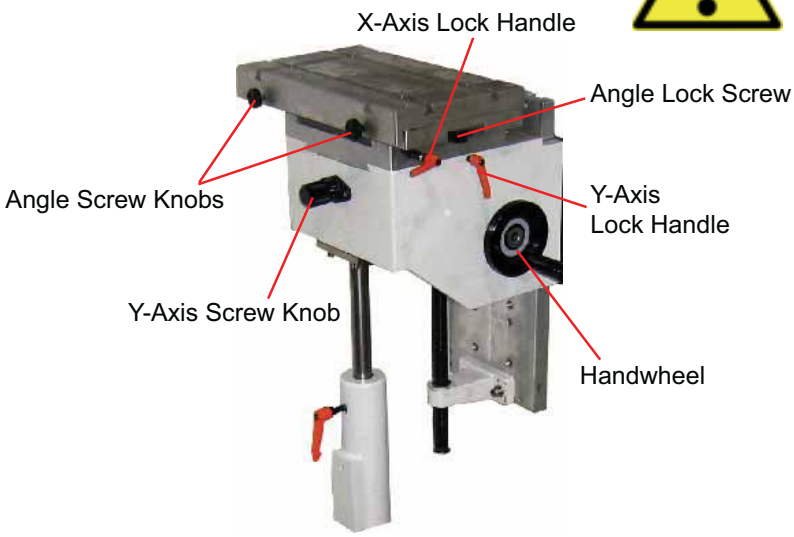
10. Press Tape Rolling key on “Main Printing Screen” to roll tape up manually.



Main Printing Screen

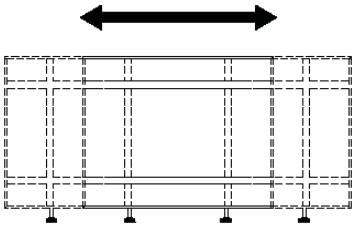
Machine Setup

Worktable Adjustment:



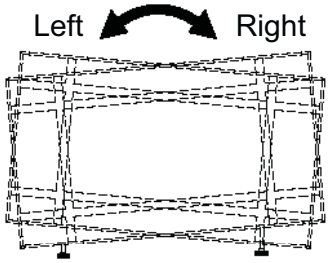
X-Axis Adjustment:

1. Release X-axis lock handle.
2. Screw X-axis screw knob to adjust X-axis position.
3. Lock X-axis lock handle to fix X-axis position.



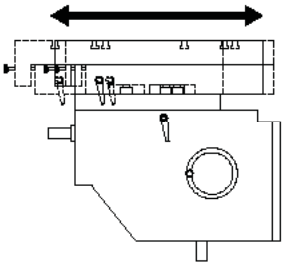
Angle Adjustment:

1. Release two angle lock screws and two angle screw knobs.
2. a. Turn Left: Loosen left angle screw knob and tighten right angle screw knob.
   b. Turn Right: Loosen right angle screw knob and tighten left angle screw knob.
3. After adjustment, tighten two angle screw knobs and two angle lock screws to lock the position.



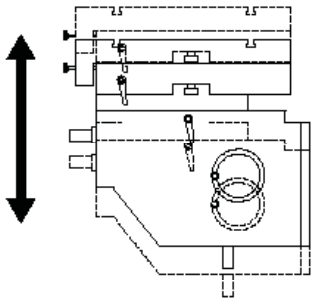
Y-Axis Adjustment:

1. Release Y-axis lock handle.
2. Screw Y-axis screw knob to adjust Y-axis position.
3. Lock Y-axis lock handle to lock Y-axis position.



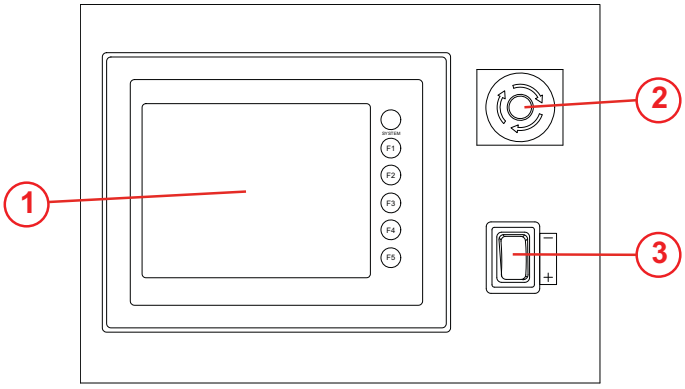
Up / Down Adjustment:

1. Release three Up/Dn lock handles.
2. Turn the handwheel to adjust up/down position.
3. Lock three Up/Dn lock handles to lock up/down position.



Control Feature

Front Control Panel:



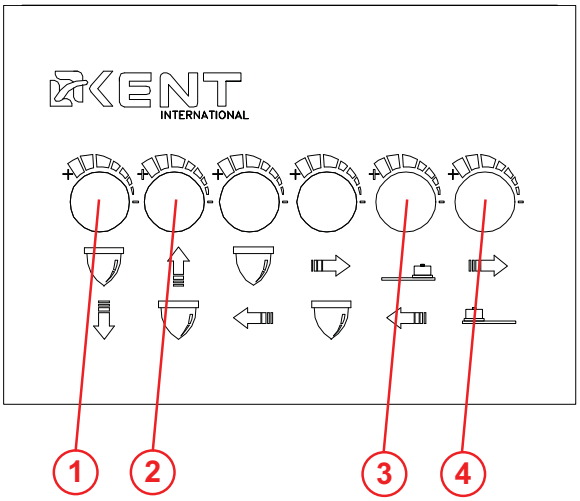
1. Touch Screen Panel:
to control machine, adjust printing functions and display messages.

2. Emergency Stop Switch:
to cut main power and air supply in an emergency.

3. +/- Key:
to increase or decrease parameter value, e.g. pad stroke depths.

Control Feature

Pneumatic Control Panel:



(RHS of printer)

1. Pad stroke downward speed control knob:
a flow regulator to control downward speed of pad stroke.

2. Pad stroke upward speed control knob:
a flow regulator to control upward speed of pad stroke.

3. Ink cup stroke forward speed control knob:
a flow regulator to control forward speed of ink cup stroke.

4. Ink cup stroke backward speed control knob:
a flow regulator to control backward speed of ink cup stroke.

Note: 4 speed control knobs are turning clockwise to decrease speed or anti-clockwise to increase.

Control Sequence

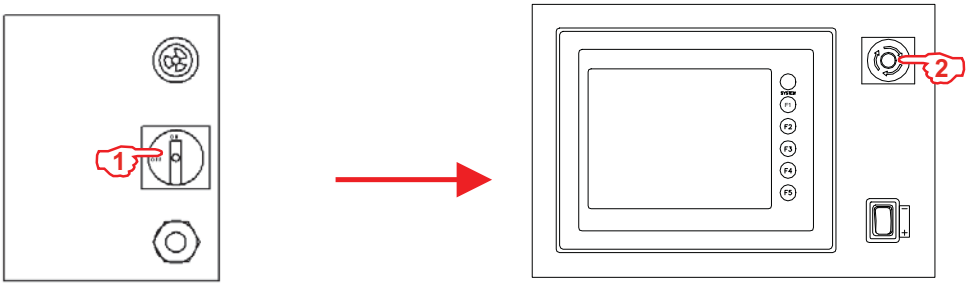
Startup Machine:

1. Turn printer main power switch on.

2. Release emergency stop switch (turn clockwise and pull).

3. Key in password (ask your local distributor for it) then press enter as in Fig.1.

4. Press "START" key to start machine and enter main printing screen (manual mode) as in Fig.2.



Printer Rear Control Panel
(LHS of printer)

Fig.1

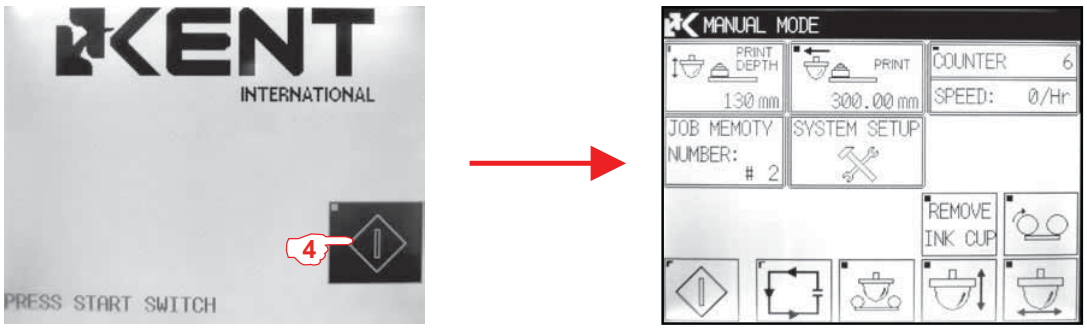


Fig.2

Note: All parameters cannot be changed (locked) until entering necessary password to unlock.
(Please see Page 5.14 "Unlock Parameters" for details.)

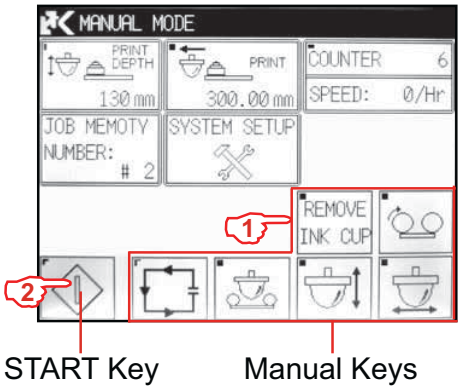
Control Sequence

Printing Modes:

Manual Printing Mode:

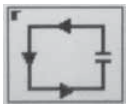
1. Press any manual key (the key will be highlighted).

2. Press “START” to enter manual printing mode and execute related function.



- Remove Ink Cup Function Key:
* This key is used to extend ink cup platform outward but pads stay at the front, in order to remove ink cups easier.
* Press the key once (key highlighted) to move ink cup stroke back.
* Press the key once again to return ink cup stroke outward.

- Tape Rolling Manual Key: press the key to rotate motor of pad clean platform.



- System One Cycle Key: Press key for 2 seconds to activate a single completed print cycle.

- Pad Clean Key: press key once to move pad to pad clean position in manual mode. press key once again to perform pad cleaning once and return pad to the front.

- Pad Up/Down Key: to move pad up and down in manual mode.

- Pad In/Out Key: to move pad in and out in manual mode.

Control Sequence

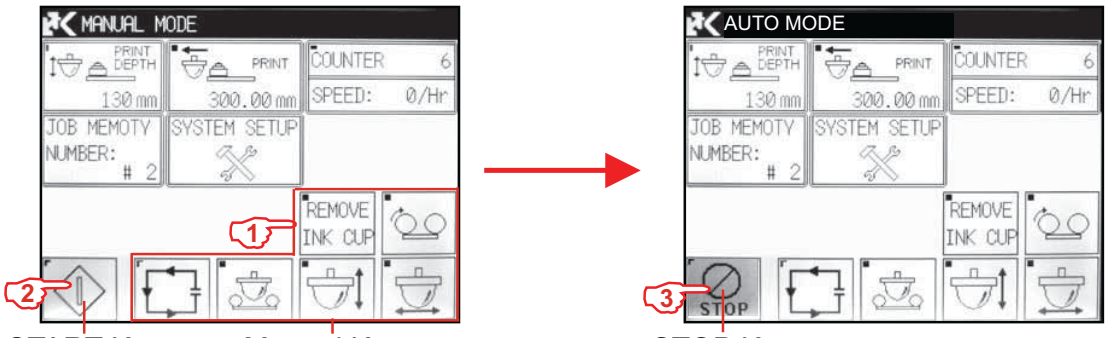
Printing Modes:

Auto Mode:
Before running this mode, it is necessary to set the printing function to “AUTO MODE”.
(Please see Page 5.10-5.12 “Printer System Setup-1” for details.)

1. Switch all of manual keys off.

2. Press “START” key once to execute continuous printing.

3. START key will now become STOP. The STOP key is for stopping Auto Mode and entering Manual Mode at the end of a print cycle.

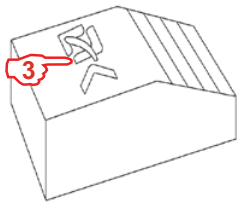


Single Cycle Mode:
Before running this mode, it is necessary to set the printing function to “SINGLE MODE”.
(Please see Page 5.10-5.12 “Printer System Setup-1” for details.)

1. Switch all of manual keys off.

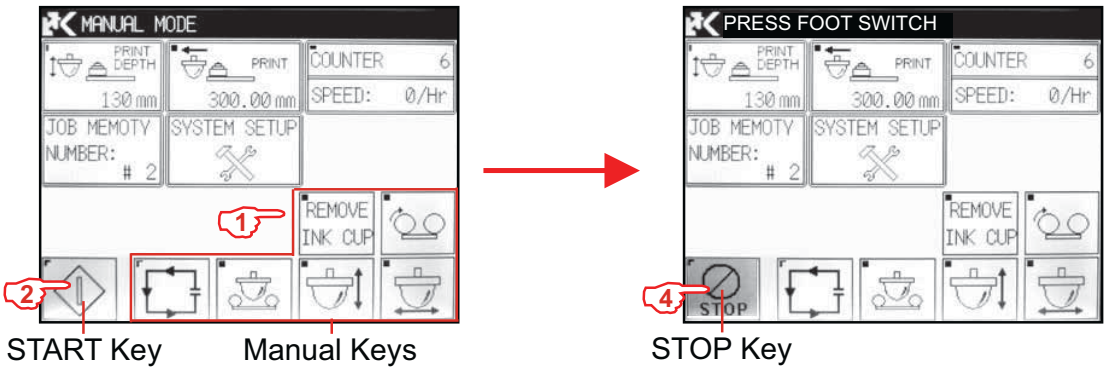
2. Press “START” key once to enter SINGLE CYCLE printing mode.
   (There is a message “PRESS FOOT SWITCH” on the display.)

3. Press foot switch once to start one printing cycle.



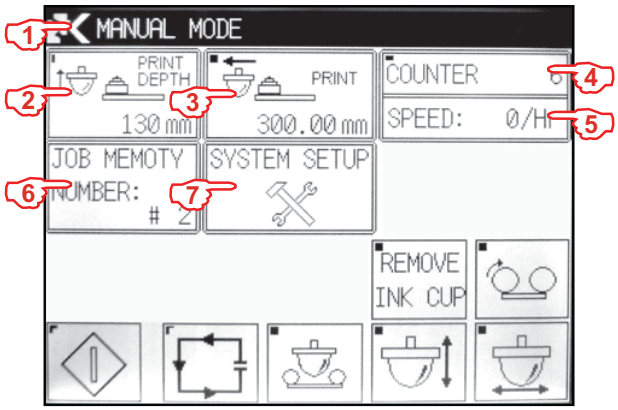
Foot Switch

4. Press “STOP” switch to stop Single Cycle Mode and entering Manual Mode at the end of a print cycle.



Control Sequence

Main Printing Screen:



1. Printer status and message display bar:
to show printing status and error message.

2. (Printing/inking/pad clean) Pad Stroke Depth Setting Key.

3. (Printing/inking/pad clean) Carriage Stroke Setting Key.

4. Cycle Counter Reset Key:
press the key for 3 seconds to reset counter value to 000000.
counter will reset automatically if its value is larger than 999999.

5. Speed Display:
to indicate machine operating speed in number of printing cycles per hour (for AUTO Mode).

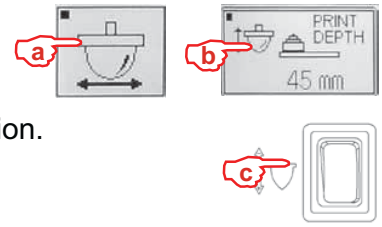
6. Job Memory Number Display:
to indicate working job memory number.

7. System Setup Key:
to enter Printer System Setup Screen. (see page 5.10 - 5.12 for details.)

Control Sequence

Main Printing Screen:

2. (Printing/inking/pad clean) Pad Stroke Depth Setting Key:



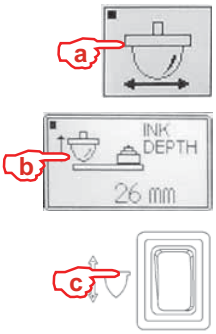
Printing Stroke Depth Adjustment:

a. Stop pad carriage at the front by pressing Pad In/out Key.
b. Press Stroke Depth Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke depth.

Remark:

- unit is in mm.
- printing stroke depth range is 16~150mm.
- each increment/decrement is 1mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Inking Stroke Depth Adjustment:

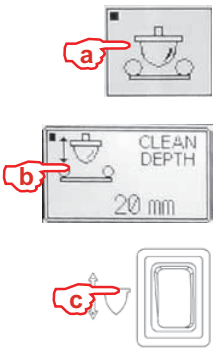


a. Stop pad carriage at the back by pressing Pad In/out Key.
b. Press Stroke Depth Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke depth.

Remark:

- unit is in mm.
- inking stroke depth range is 16~150mm.
- each increment/decrement is 1mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Pad Clean Stroke Depth Adjustment:



a. Stop pad carriage above the pad clean platform by pressing Pad Clean Key.
b. Press Stroke Depth Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke depth.

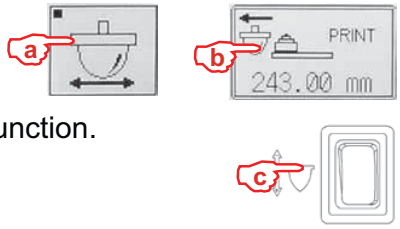
Remark:

- unit is in mm.
- pad clean stroke depth range is 16~150mm.
- each increment/decrement is 1mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Control Sequence

Main Printing Screen:

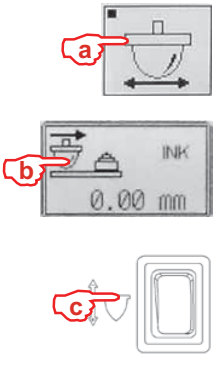
3. (Printing/inking/pad clean) Carriage Stroke Setting Key:
Printing Stroke Setting Adjustment:



a. Stop pad carriage at the front by pressing Pad In/out Key.
b. Press Carriage Stroke Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke value.

Remark:
- unit is in mm.
- printing stroke setting range is 130.00~300.00mm.
- each increment/decrement is 0.02mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

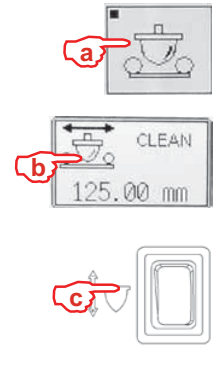
Inking Stroke Setting Adjustment:



a. Stop pad carriage at the back by pressing Pad In/out Key.
b. Press Carriage Stroke Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke value.

Remark:
- unit is in mm.
- inking stroke setting range is 0.00~70.00mm.
- each increment/decrement is 0.02mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Pad Clean Stroke Setting Adjustment:



a. Stop pad carriage above the pad clean platform by pressing Pad Clean Key.
b. Press Carriage Stroke Setting Key once to activate the setting function.
The key will be highlighted.
c. Press +/- Key on front control panel to change stroke value.

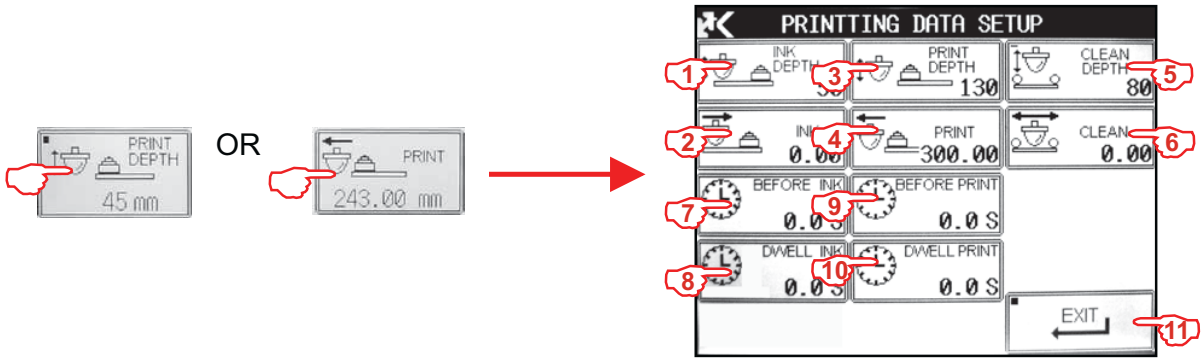
Remark:
- unit is in mm.
- pad clean stroke setting range is 0.02~80.00mm.
- each increment/decrement is 0.02mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Control Sequence

Printer Printing Data Setup:

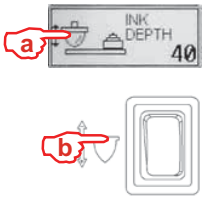
When pad carriage stays at the front, press Pad Stroke Depth Setting Key or Carriage Stroke Setting Key on Main Printing Screen for 2 seconds to enter Printer Printing Data Setup Screen.

Note: All parameters cannot be changed (locked) until entering necessary password to unlock.
(Please see Page 5.14 “Unlock Parameters” for details.)



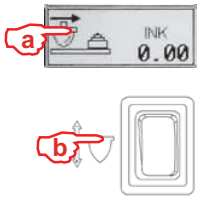
1. Pad Ink Stroke Depth Setting Key.
2. Carriage Ink Stroke Setting Key.
3. Printing Stroke Depth Setting Key.
4. Carriage Printing Stroke Setting Key.
5. Pad Clean Stroke Depth Setting Key.
6. Carriage Clean Stroke Depth Setting Key.
7. Delay Before Ink Timer Key.
8. Ink Dwell Delay Timer Key.
9. Delay Before Print Timer Key.
10. Print Dwell Delay Time Key.
11. EXIT Key:
press key to return Main Printing Screen.

1. Pad Ink Stroke Depth Setting Key:



a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke depth.
Remark:
- unit is in mm.
- inking stroke depth range is 16~150mm.
- each increment/decrement is 1mm.

2. Carriage Ink Stroke Setting Key:

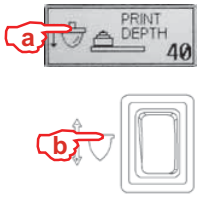


a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke value.
Remark:
- unit is in mm.
- inking stroke setting range is 0.00~70.00mm.
- each increment/decrement is 0.02mm.

Control Sequence

Printer Printing Data Setup:

3. Printing Stroke Depth Setting Key:

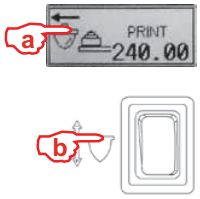


a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke depth.

Remark:

- unit is in mm.
- printing stroke depth range is 16~150mm.
- each increment/decrement is 1mm.

4. Carriage Printing Stroke Setting Key:

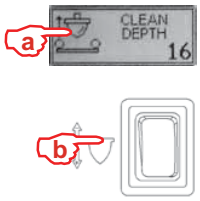


a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke value.

Remark:

- unit is in mm.
- printing stroke setting range is 130.00~300.00mm.
- each increment/decrement is 0.02mm.

5. Pad Clean Stroke Depth Setting Key:

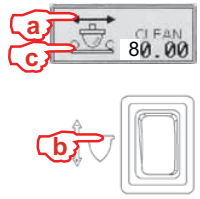


a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke depth.

Remark:

- unit is in mm.
- Pad clean stroke depth range is 16~150mm.
- each increment/decrement is 1mm.

6. Carriage Clean Stroke Setting Key:



a. Press key once. The key will be highlighted.
b. Press +/- Key on front control panel to change stroke depth.

OR

c. Press the key for 1 second to enter Data Entry Screen.
d. Key in value and then press "ENT" key to enter or "CLR" to escape.

Remark:

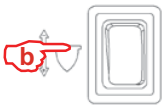
- unit is in mm.
- Pad clean stroke setting range is 0.02~80.00mm.
- each increment/decrement is 0.02mm.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Control Sequence

Printer Printing Data Setup:

7. Delay Before Ink Timer Key:

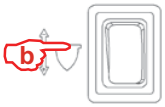
a. Press key once. The key will be highlighted.
b. Press +/- Key on main control panel to change timer value.



Remark:
- unit is in second.
- setting range is 0.0 - 5.0S.
- each increment/decrement is 0.1S.
- function of this timer is: before pad moves down to pick ink, machine stops for a preset time and then continues picking ink.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

8. Ink Dwell Delay Timer Key:

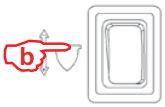
a. Press key once. The key will be highlighted.
b. Press +/- Key on main control panel to change timer value.



Remark:
- unit is in second.
- setting range is 0.0~5.0S.
- each increment/decrement is 0.1S.
- function of this timer is: pad presses on printing plate surface and stops for a preset time.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

9. Delay Before Print Timer Key:

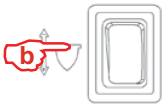
a. Press key once. The key will be highlighted.
b. Press +/- Key on main control panel to change timer value.



Remark:
- unit is in second.
- setting range is 0.0 - 5.0S.
- each increment/decrement is 0.1S.
- function of this timer is: before pad moves down to print, machine stops for a preset time and then continues printing.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

10. Print Dwell Delay Time Key:

a. Press key once. The key will be highlighted.
b. Press +/- Key on main control panel to change timer value.



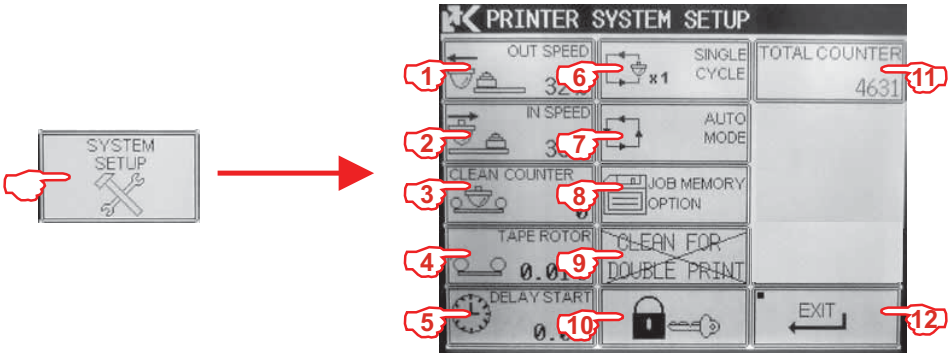
Remark:
- unit is in second.
- setting range is 0.0 - 5.0S.
- each increment/decrement is 0.1S.
- function of this timer is : pad presses on product surface and stops for a preset time.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

Control Sequence

Printer System Setup - 1:

Press System Setup Key on Main Printing Screen for one second to enter Printer System Setup screen 1.

Note: All parameters cannot be changed (locked) until entering necessary password to unlock. (Please see Page 5.15 “Unlock Parameters” for details.)



1. Pad Carriage Backward Speed Setting Key.

2. Pad Carriage Forward Speed Setting Key.

3. Pad Clean Counter Setting Key

4. Pad Clean Tape Rotor Timer Setting Key.

5. Delay Before Start Timer Setting Key.

6. Printing Function Selector.

7. Print Mode Selector.

8. Job Memory Key:
to save data into or retrieve data from job memories. (see page 5.14 for details.)

9. Clean For Double Print On/Off Selector.

10. System Lock Key:
to lock or unlock printer parameters. (see page 5.15 - 5.16 for details.)

11. Cycle Counter Reset Key.
to show number of printed cycles.

12. EXIT Key:
press the key to return Main Printing Screen.

Control Sequence

Printer System Setup - 1:

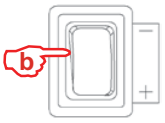
1/2. Pad Carriage Backward/Forward Speed Setting Key:

a. Press desired key once. The key will be highlighted.

b. Press +/- Key on main control panel to increase or decrease the value.

Remark:

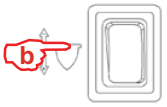
- value ranges are 1-99%.
- each increment/decrement is 1%.
- hold the +/- Key for longer than half second to increase or decrease value continuously.



3. Pad Clean Counter Setting Key:

to set frequency of pad clean.

a. Press key once. The key will be highlighted.



b. Press +/- Key on main control panel to increase or decrease the value.

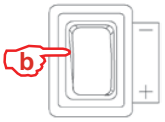
Remark:

- value range is 0-99 cycles.
- each increment/decrement is 1.
- hold the +/- Key for longer than half second to increase or decrease value continuously.
- when value = 0, pad clean function will be disable.

4. Pad Clean Tape Rotor Timer Setting Key:

to set timing of pad clean tape motor, i.e. distance of tape moved.

a. Press key once. The key will be highlighted.



b. Press +/- Key on main control panel to change timer value.

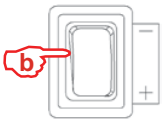
Remark:

- unit is in second.
- setting range is 0.01 - 9.99s.
- each increment/decrement is 0.01s.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

5. Delay Before Start Timer Setting Key:

to set delay time before starting next cycle in auto mode.

a. Press key once. The key will be highlighted.



b. Press +/- Key on main control panel to change timer value.

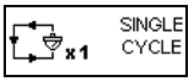
Remark:

- unit is in second.
- setting range is 0.0 - 5.0s.
- each increment/decrement is 0.1s.
- hold the +/- Key for longer than half second to increase or decrease value continuously.

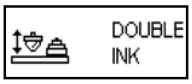
Control Sequence

Printer System Setup - 1:

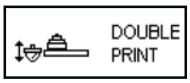
6. Print Function Selector:
repeatedly pressing this key to select print function.



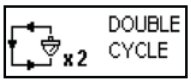
- Single Print Cycle: Machine performs one ink and one print in a printing cycle.



- Double Ink: Machine performs two inks and one print in a printing cycle.



- Double Print: Machine performs one ink and two prints in a printing cycle.



- Double Print Cycle: Machine performs two ink and print cycles in a printing cycle.

7. Print Mode Selector:
Repeatedly press this key to select print mode.

- Auto Mode: Press Start key to start continuous printing cycle.

- Single Cycle Mode: Step on foot switch once to start one printing cycle.

9. Clean For Double Print On/Off Selector:
Repeatedly press the switch to turn clean for double print function on or off alternately.

- ON

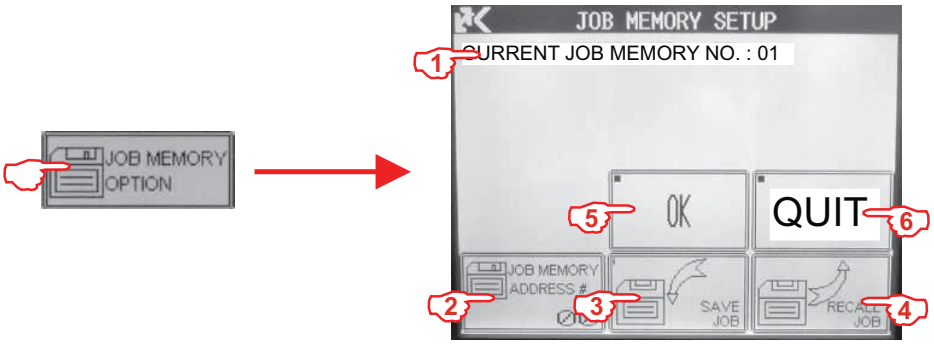
- OFF

Control Sequence

Job Memory Setup:

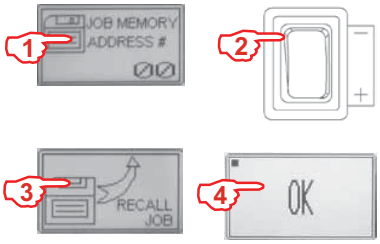
Press Job Memory Key on Printer System Data Setup Screen to enter Job Memory Setup Screen.

Note: All parameters cannot be changed (locked) until entering necessary password to unlock. (Please see Page 5.15 “Unlock Parameters” for details.)



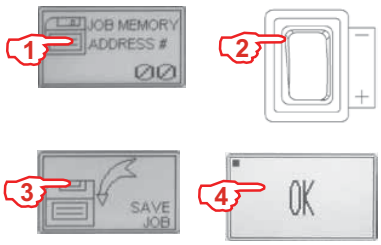
1. Current Job Memory Number Display.
2. Job Memory Number Selector.
3. Save Job Key.
4. Recall Job Key.
5. ENTER Key.
6. QUIT Key: to return Printer System Data Setup.

Job Recalling:



1. Press Job Memory Number Selector once.
   The key will be highlighted.
2. Press +/- Key on main control panel to change job memory number.
   Remark: Range is 0~20.
3. Press Recall Job Key once. Then display will ask you to confirm.
4. Press ENTER Key for 2 seconds to confirm.
5. Then current job memory number will be changed as recalled job number.

Job Saving:



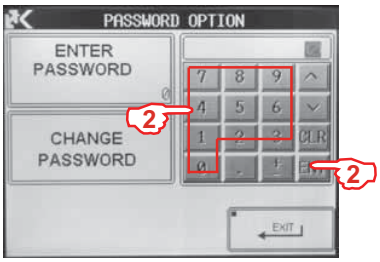
1. Press Job Memory Number Selector once.
   The key will be highlighted.
2. Press +/- Key on main control panel to change job memory number.
   Remark: Range is 0~20.
3. Press Save Job Key once. Then display will ask you to confirm.
4. Press ENTER Key for 2 seconds to confirm.

Control Sequence

System Lock:

Unlock Steps:

1. Press System Lock Key on Printer System Setup Screen to enter Password Option Screen.



2. Key in managing password and then press ENT key to confirm.

Remark:

- Ex-factory password is 11111.
- If password is wrong, a message “PASSWORD INCORRECT” will be shown.
- You can press the key again to reenter password.
- If password is correct, screen will return to Printer System Setup Screen and the lock icon will be opened.

Unlock

Remark: Press the key for 3 seconds to relock.

Unlock Lock

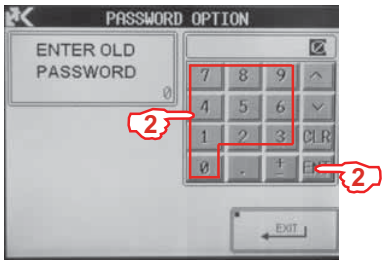
Change Managing Password Steps:

1. Press Change Password Key to activate the function. A new screen with Enter Old Password Key will be shown.

2. Key in old managing password and then press ENT key to confirm.

Remark:

- If password is wrong, screen with Enter Old Password Key will be shown again. You can press the key again to reenter password.
- If password is correct, screen will change to new screen with Enter New Password Key.



3. Key in new managing password and then press ENT key to confirm. Then a new screen with Enter New Password Again Key will be shown.

Remark: Password 00000000 is not accepted.

Control Sequence

Change Managing Password Steps:

4. Key in new managing password again and then press ENT key to confirm.

Remark:

- If password is correct, a new screen with Password Changed confirmation will be shown.
- Press EXIT key to return Main Printing Screen.

Keyboard:

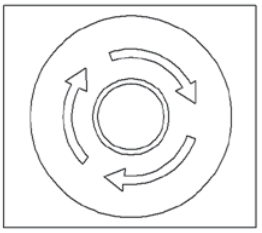
1. Numeric Keys.
2. CRL Key: to cancel new entry.
3. ENT Key: to confirm new entry.

Control Sequence

Machine Stop & Restart:

1. Emergency Stop Switch:

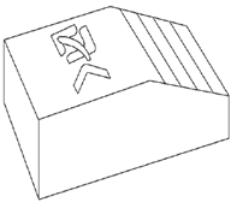
To cut main power and air in an emergency.
Release switch by turning its mushroom head clockwise.
Restart machine as the steps in section “Machine Startup” in page 5.1.



Emergency Stop Switch

2. Foot Switch:

To stop machine movement as soon as the foot switch is pressed.
Press START key on touch screen panel to restart.



Foot Switch

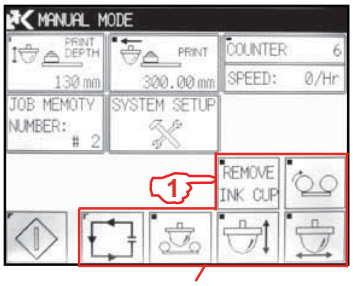
3. Side Doors:

When opeartor opens side door to set up ink cup or pad, all movable parts will stop immediately. All manual function switches or START key will be no reaction.
Close side door. Printer will not move until press START key once.

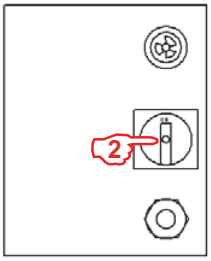
Safety Door Opened screen

Switch off the machine:

1. Stop printing cycle in Auto Mode, or switch off all manual function switches in Manual Mode.
2. Turn main power switch off for long holiday.



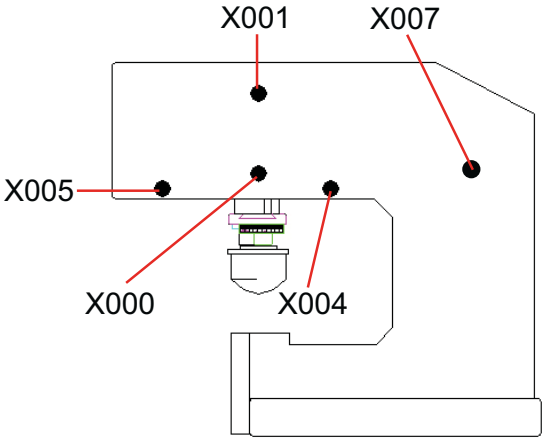
Manual Keys
Main Printing Screen



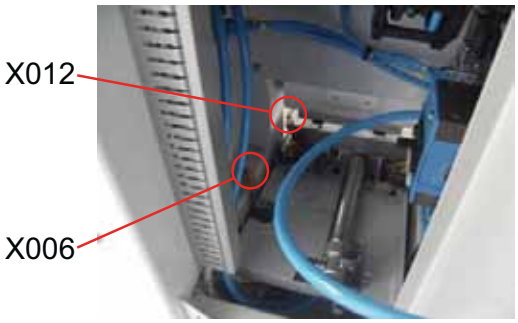
Printer Rear Control Panel
(LHS of printer)

Sensor Layout

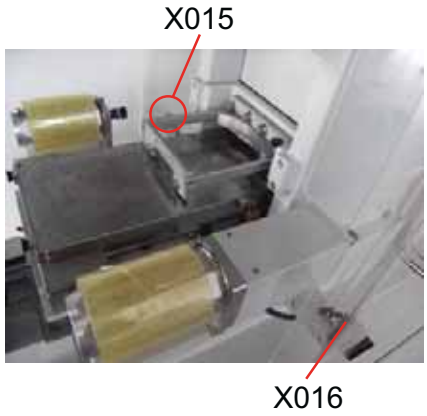
X000------ Pad stroke optical ruler sensor (PS2).
X001------ Pad stroke home optical sensor (PS1).
X004------ Pad carriage home sensor (PS5).
X005------ Pad carriage far end limit sensor (PS6).
X007------ Pad carriage home registration sensor.



X006------ Ink cup platform home sensor.
X012------ Ink cup platform actuated sensor.



X015------ Left side door sensor (SR1).
X016------ Right side door sensor (SR2).

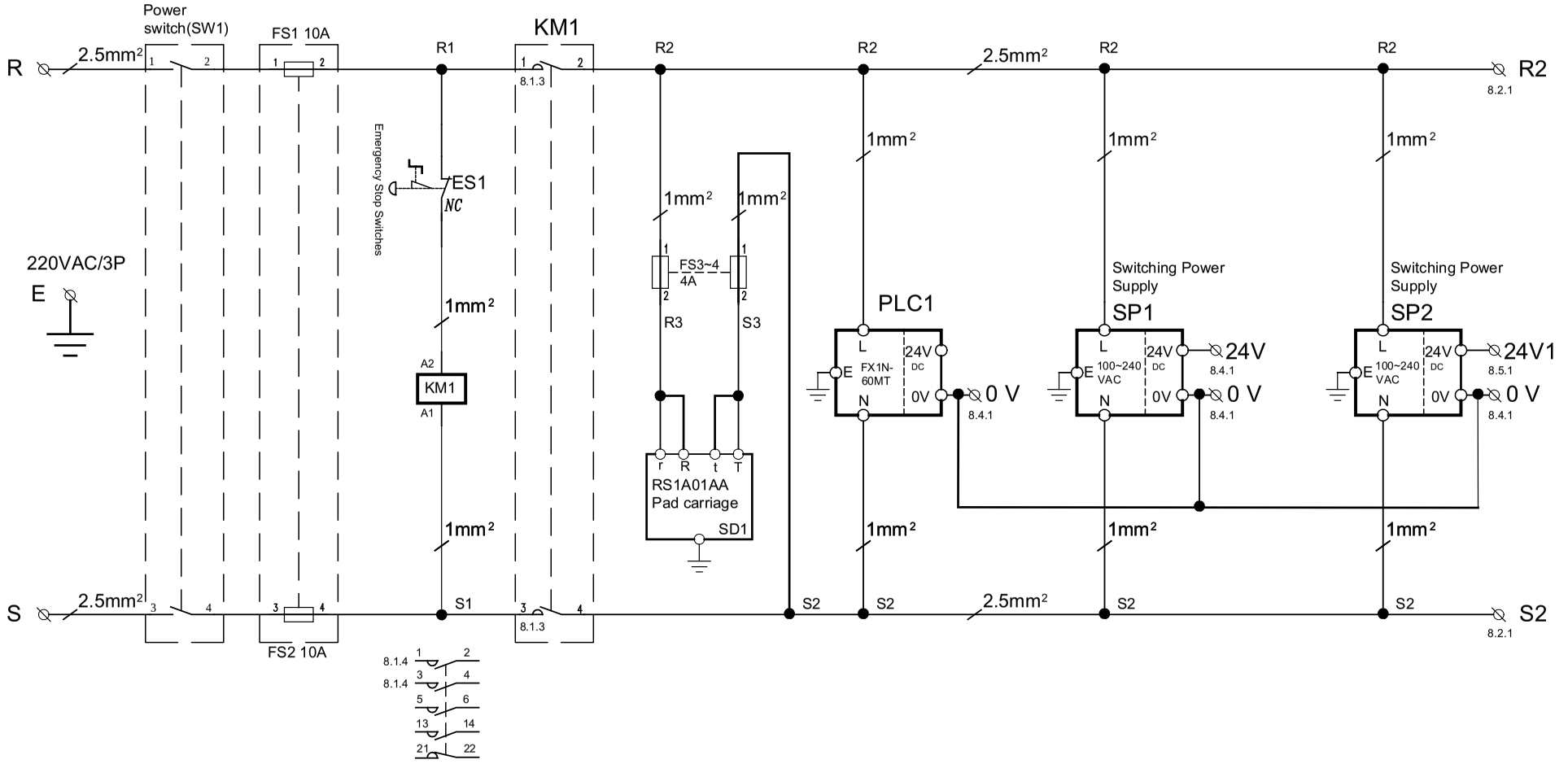


I/O Assignment

INPUTS		OUTPUTS	
X000	Pad stroke optical ruler sensor (PS2)	Y000	Pad carriage servo pulse signal
X001	Pad stroke home optical sensor (PS1)	Y001	Spare output
X002	+/- key (+)	Y002	Pad carriage motor direction signal
X003	+/- key (-)	Y003	Spare output
X004	Pad carriage home sensor (PS5)	Y004	Pad stroke servo driver SON signal
X005	Pad carriage far end limit sensor (PS6)	Y005	Spare output
X006	Ink cup platform home sensor	Y006	Spare output
X007	Pad carriage home registration sensor	Y007	Spare output
X010	Pad carriage servo ready OK signal	Y010	Buzzer
X011	Pad carriage servo driver END signal	Y011	Main air solenoid
X012	Ink cup platform actuated sensor	Y012	Ink cup platform in/out solenoid
X013	Spare output	Y013	Pad clean tape motor on/off relay
X014	Spare output	Y014	Pad stroke up/down solenoid
X015	Left side door sensor (SR1)	Y015	Print dwell solenoid
X016	Right side door sensor (SR2)	Y016	Spare output
X017	Foot switch	Y017	Spare output
X020	15 ways connector pin 5 configuration	Y020	Spare output
X021	15 ways connector pin 4 configuration	Y021	Spare output
X022	15 ways connector pin 3 configuration	Y022	Spare output
X023	Spare input	Y023	Spare output
X024	Spare input	Y024	Spare output
X025	Spare input	Y025	Spare output
X026	Spare input	Y026	Spare output
X027	Spare input	Y027	Spare output
X030	Spare input		
X031	Spare input		
X032	Spare input		
X033	Spare input		
X034	Spare input		
X035	Spare input		
X036	Spare input		
X037	Spare input		
X040	Spare input		
X041	Pad carriage servo alarm signal 1		
X042	Pad carriage servo alarm signal 2		
X043	Pad carriage servo alarm signal 3		

ELECTRICAL CIRCUIT DIAGRAM - HIGH POWER (1)

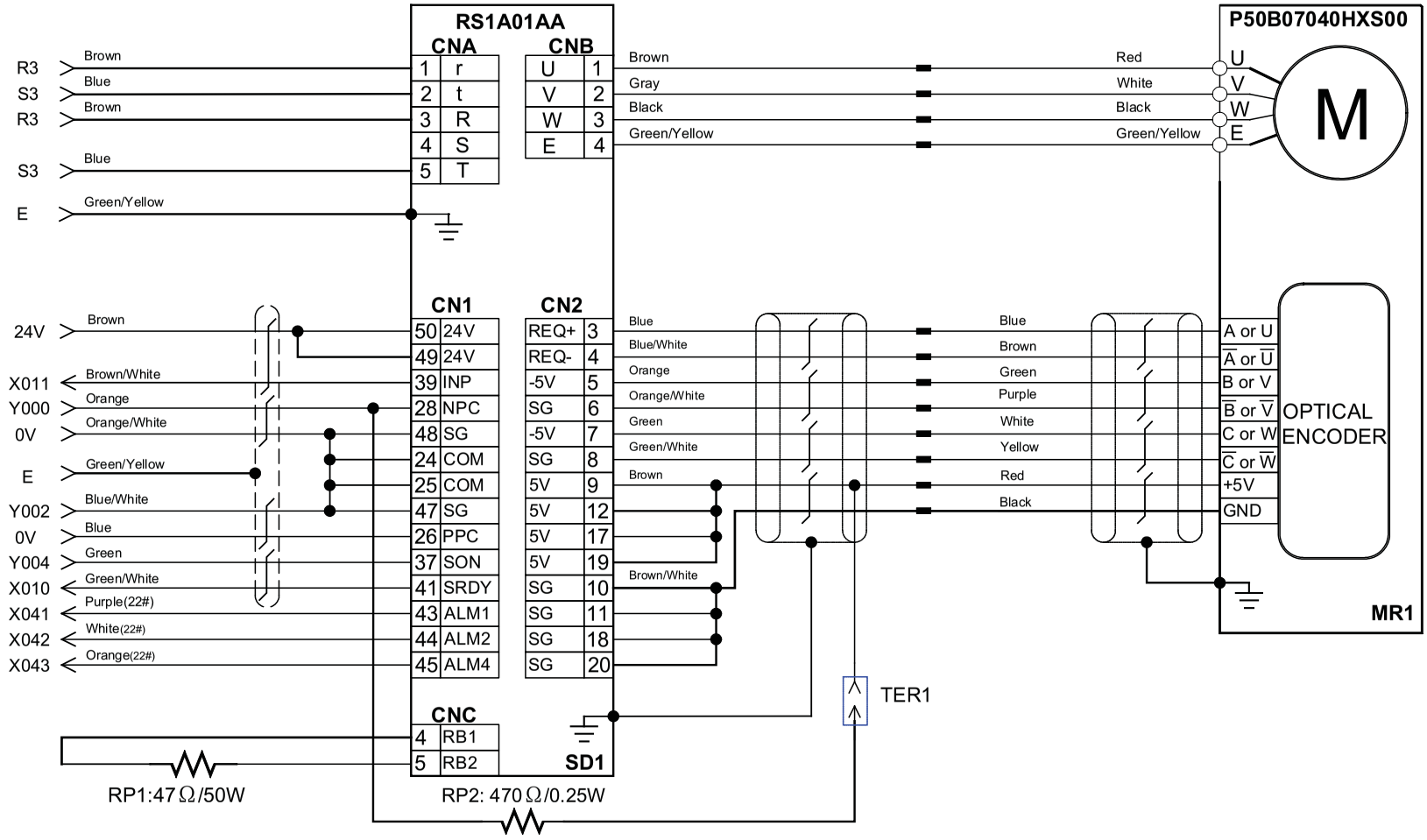
8.1



LABEL	KENT PART NO.	DESCRIPTION	LABEL	KENT PART NO.	DESCRIPTION
SW1	15IDS-EC-000	Power on/off switch	ES1	15-EC-000	Emergency stop switch
FS1~FS2	KSDTT-EC-112	10A 500V Fuse	SP1~SP2	EM-EC-040	DC 24V switching power supply
PLC1	AN15-EC-010	Programmable logic controller	KM1	KSDTT-EC-151	18A/220V Contactor
SD1	DRE70-EC-022	Servo motor driver	FS3~FS4	KSDTT-EC-111	4A Fuse

ELECTRICAL CIRCUIT DIAGRAM - PAD CARRIAGE SERVO MOTOR

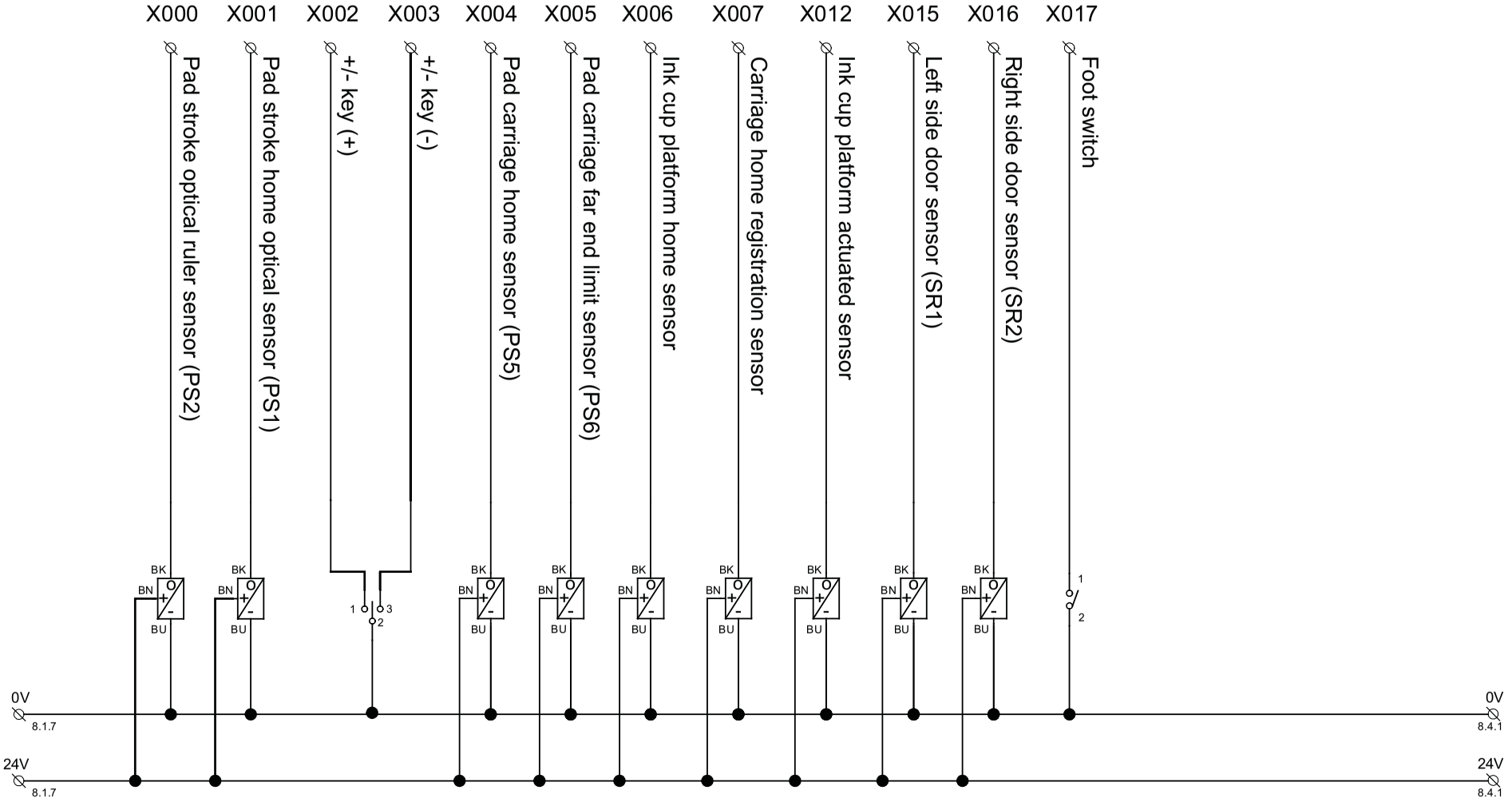
8.2



LABEL	KENT PART NO.	DESCRIPTION	LABEL	KENT PART NO.	DESCRIPTION
RP1	DRE70-EC-060	Metal resistor 47Ω/50W	TER1(male)	KSD-EC-011	Red terminal
RP2	15-EC-672	Resistor 470Ω 0.25W	TER1(female)	KSD-EC-012	Red terminal
SD1	DRE70-EC-022	Servo driver	MR1	AN15-EC-300	400W servo motor

ELECTRICAL CIRCUIT DIAGRAM - PLC INPUTS

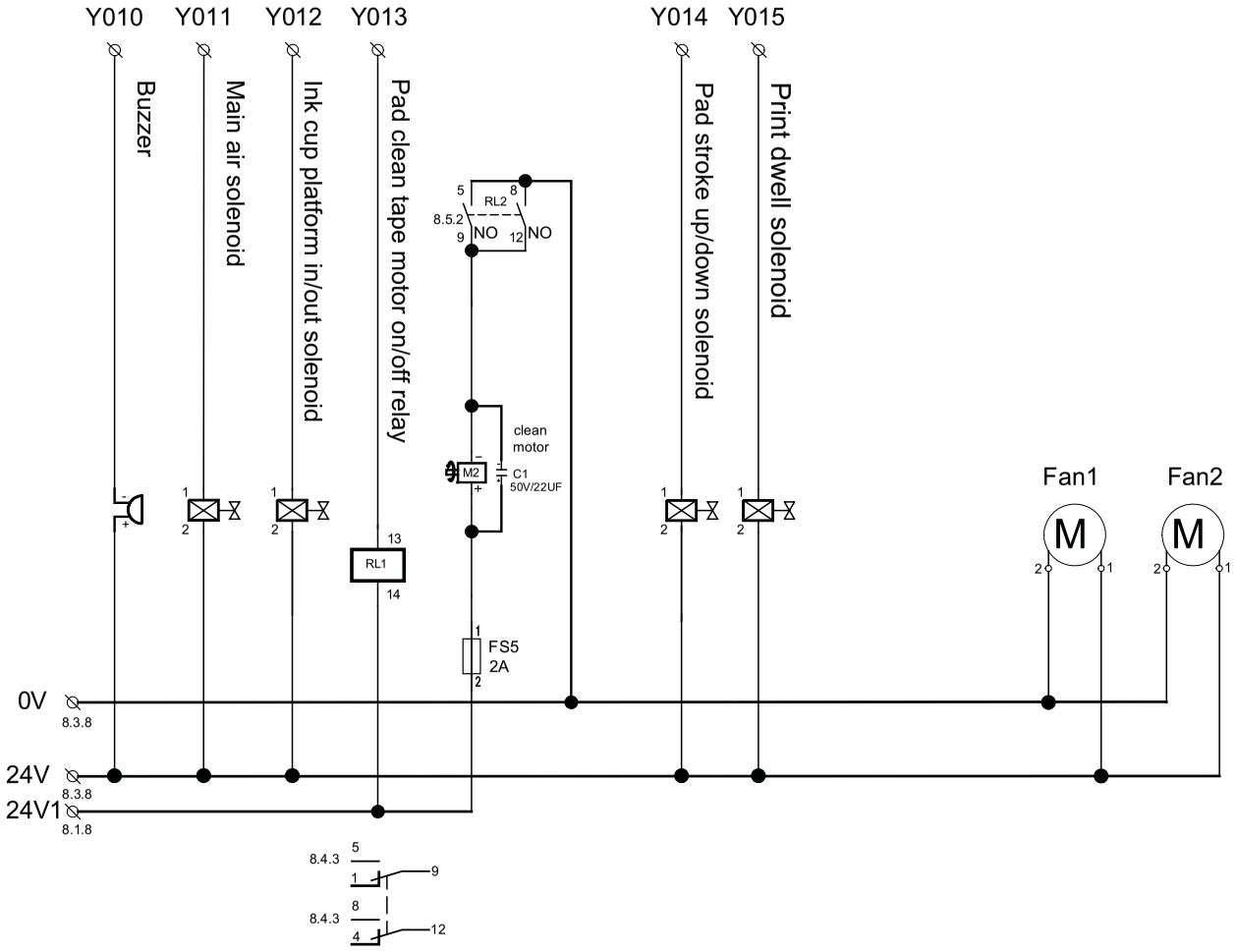
8.3



LABEL	KENT PART NO.	DESCRIPTION	LABEL	KENT PART NO.	DESCRIPTION
X000	AN10-EC-620	SENSOR EE-SX672	X006~7	15-EC-131	SENSOR TL-Q5MC1
X001	AN10-EC-620	SENSOR EE-SX672	X012	15-EC-131	SENSOR TL-Q5MC1
X002~03	HVA90-EC-001	+/- SWITCH	X015~16	15-EC-131	SENSOR TL-Q5MC1
X004~05	15-EC-131	SENSOR TL-Q5MC1	X017	15-EC-A974	FOOT SWITCH

ELECTRICAL CIRCUIT DIAGRAM - PLC OUTPUTS

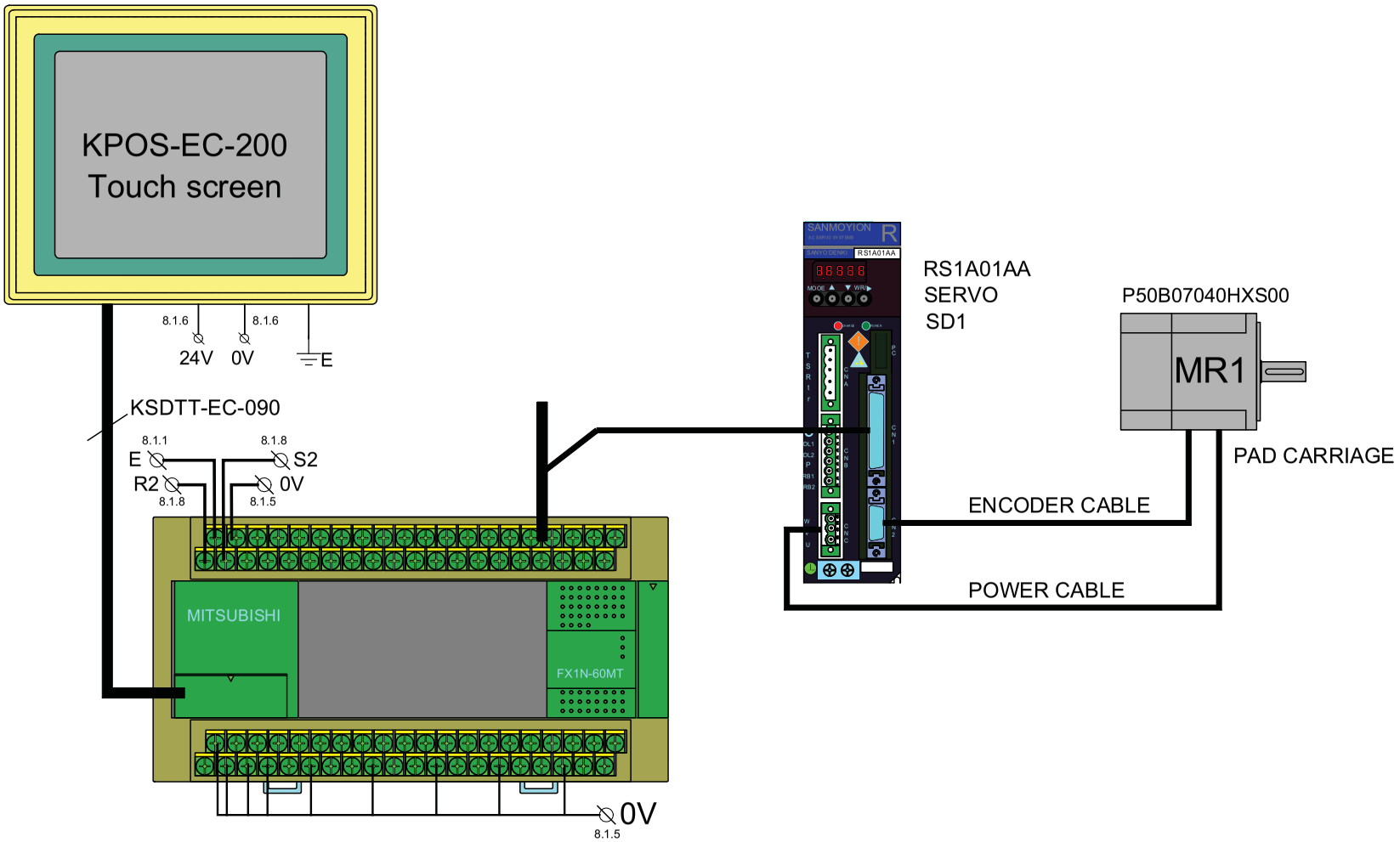
8.4



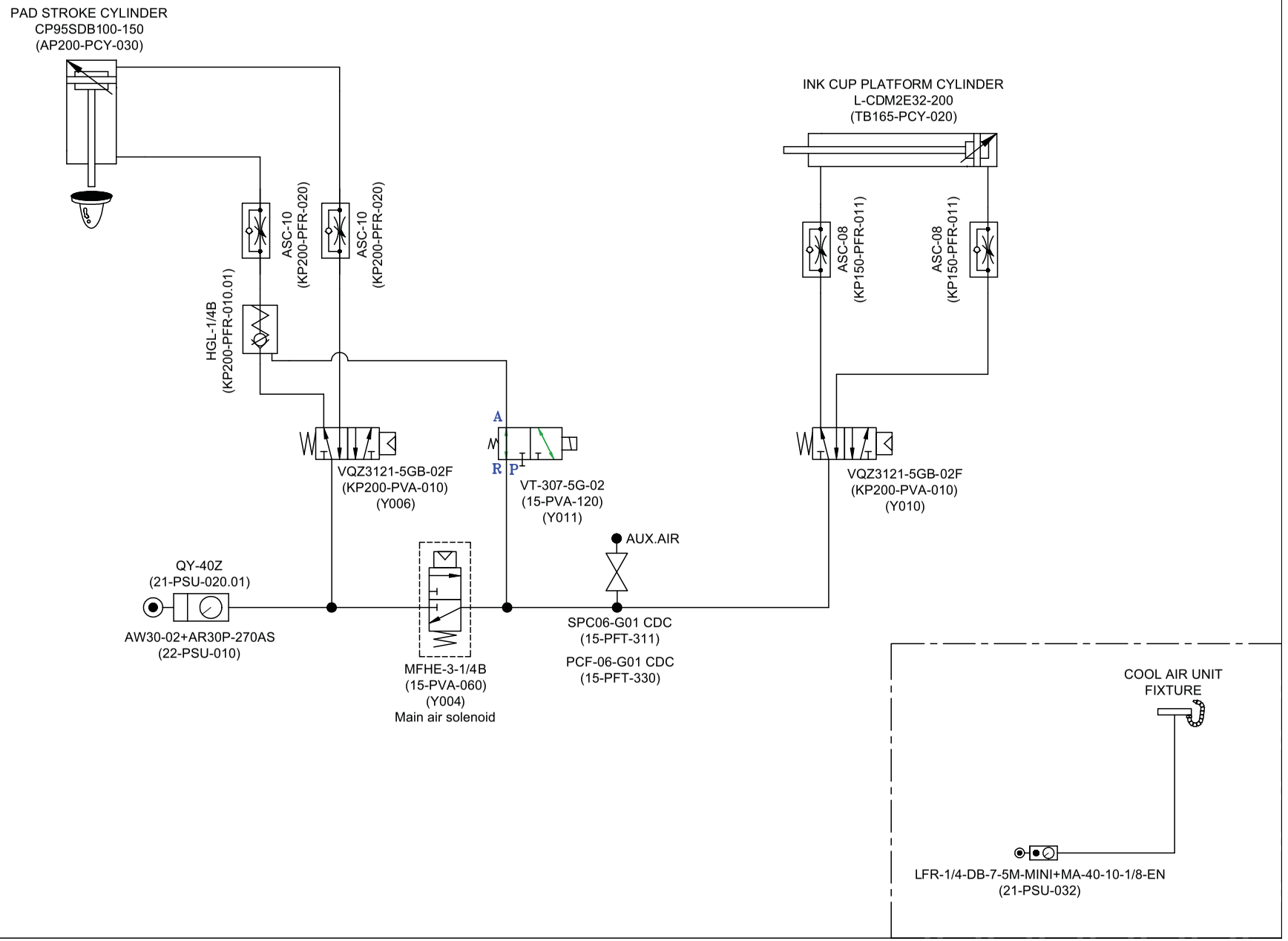
LABEL	KENT PART NO.	DESCRIPTION	LABEL	KENT PART NO.	DESCRIPTION	LABEL	KENT PART NO.	DESCRIPTION
Y010	MPOS-EC-040	BUZZER	Y014	KP200-PVA-010	SOLENOID VALVE	C1	AN10-EC-330	Capacitor 22uF 50V
Y011~12	15-PVA-070	SOLENOID COIL	Y015	15-PVA-120	3/2 SINGLE SOLENOID	Fan1	KSP3-EC-000	Fan
RL1	35-EC-071	RELAY DC24V 5A	RL1	KSD90-EC-020	RELAY DC24V 10A	Fan2	KSP3-EC-000	Fan
FS5	15-EC-751	SLOW BLOW FUSE/2A	M2	KSD-EC-071	Motor	FR1	MPOS-EC-150	Thermal overload relay for blower

ELECTRICAL CIRCUIT DIAGRAM - PLC AND TOUCH PANEL LAYOUT

8.5



Pneumatic Circuit Diagram



Maintenance

Safety instructions for doing maintenance:

- Electrical and pneumatic energy sources must be cut off from machine before doing maintenance. Complete separation of power plug from socket and air hose from compressed air line by mean of lever or quick connector coupling is mandatory to prevent injuries caused by unexpected energizing or start up of machines.
- Only an authorized electrician is allowed to access the control of machine.
- Do not wear loose or hanging clothes or jewelers.
- Do not clean machine with high pressure compressed air.

Daily inspection:

- Compressed air supply pressure for machine is higher than 5.5 bar and stable. Pressure for air blower is kept in 1-2 bar.
- Compressed air supply must be clear of water and oil.
- Drain water from bowl of service unit if there is deposited water.
- Electricity supply is kept in 220V AC and stable.
- Earth line is connected properly.
- No cables and air hoses lay on working floor.
- Check whether buzzer sound is normal.
- Check whether printing pad surface is damaged. It needs to be replaced whenever its surface is scratched. Finishing of pad surface begins degrading after 5000 cycles used. Usual life of printing pad is 20000 cycles or longer.
- Check whether ink cup ring edge is chipped. Recommended to do reconditioning per 2 days or 4 shifts. If ring edge is widen than 0.25mm, the ring needs to be regrinded.
- Check whether printing plate surface was worn out or scratched. Maximum life of aluminum plate is 50000 cycles and that of thin steel plate is 100000 cycles.

Maintenance after each printing job or working day:

- Release water from service unit.
  (See page 10.3 "Check Service Unit" for details)
- Unload ink cups from printing plates. Cover ink cups by polymer plate covers after cleaning.
- Clean ink on printing plates with thinner. Coated plates with grease to avoid oxidisation.
- Clean ink on pads with thinner. Store pads in cool place. Never put pads into any plastic bag.
- Keep ink cup platform clean.
- Apply grease to easy-rusty parts and areas.

Maintenance

Weekly maintenance:

- Do daily maintenance as usual.
- Clean machine body with mild cleaning solvent.
- Check the overall operation of machine.
- Check whether there is air leakage from pneumatic devices and connections.
- Check whether there are visible damages of cables, air hoses and mechanisms.
- Check whether all movable parts move smoothly, without abnormal sound.
- Check visually whether any electrical and pneumatic connectors are loosed.
- Check sensors position and sensitivity adjustments.
- Check and tighten if any screws are loosed by vibration from machine movement.
- Lubricate machine movable parts as indicated. (See page 10.3 "Lubrication" for details)

Monthly maintenance:

- Do daily and weekly maintenance as usual.
- Check cables and connectors of servo motors.
- Check condition of ball screws and guide rails.
- Check fuses of all devices.
- Check function of emergency switch.

Maintenance

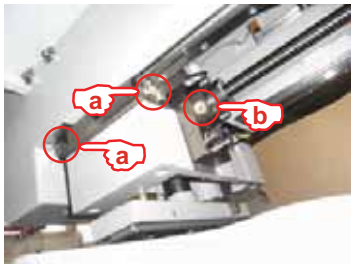
There are some regular maintenance works to keep printer in smooth operation.

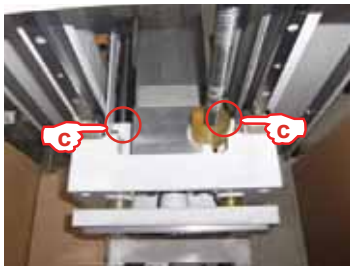
1. Lubrication:

Weekly lubricate machine parts by injecting grease into grease nipples indicated in the following pictures.
Kent grease part no.: DP-0047 (fag rolling bearing grease)


handy oil pump

a. Grease nipples and guide rails for pad carriage.
b. Grease nipple of ball screw and nut for pad carriage.
c. Grease nipples of shafts for pad stroke.
d. Grease nipples of ink cup platform.



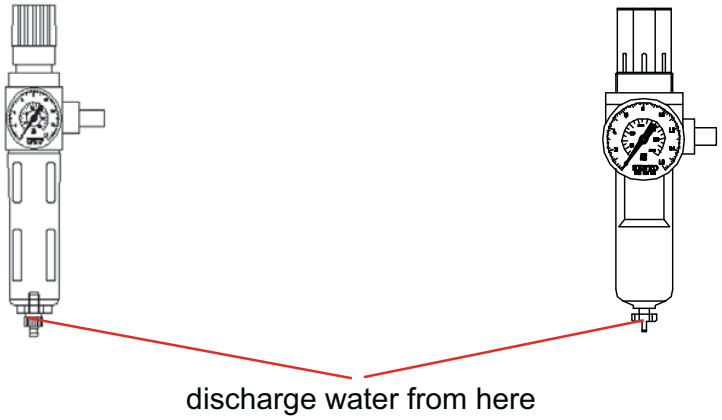


3. Check Service Unit:

Daily check
* If there is liquid inside the filter tube, discharge the liquid.
* Keep the machine operation pressure to 5-6 bar.
* Keep the air blower pressure to 1-2 bar.
* Use clean and dry compressed air.

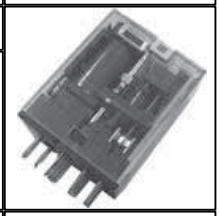
Main Service Unit
(at the rear of machine body)

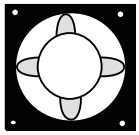
Service Unit For Air Blower
(at the rear of machine body)



Electrical Spare Parts List

15-EC-131 Proximity sensor (TL-Q5MC1)	
15-EC-420 Emergency stop switch (IYW1B-V4E01R)	
15-EC-751 Slow blow fuse (2A)	
15-EC-A974 Foot switch	
15IDS-EC-000 Main power switch (194E-E25-1753-6N)	
15IDS-EC-001 5.7" touch screen display (V606EM20)	
AN15-EC-300 P50B07040HXS 400W servo motor	
DRE70-EC-022 Servo motor driver (RS1A01AA)	
EM-EC-040 Switching power supply 24VDC 2.7A (input:100-230VAC)	

HVA90-EC-001 +/- switch	
KSD-EC-071 DC motor DME60S8HFPB	
KSD-EC-081 Gear box 8DG180F 1:180	
KSD130-EC-000 Metal resistor 47OHM/50W	
KSD90-EC-020 Relay DC24V 10A (RU2S-D24)	
KSDTT-EC-090 Touch screen (V-FX1NCPU)	
KSDTT-EC-111 4A 500V fuse 10X38mm	
KSDTT-EC-112 Fuse slow blow 160 500V (10X38mm)	
KSDTT-EC-151 18A/220V contactor (LC1-D18M7C)	

KSP3-EC-000 Fan (4 1/2INCH) DC24V	
MPOS-EC-040 Buzzer (B11S3240 24VDC)	
MPOS-EC-100 FX1N-60MT PLC	
MPOS-EC-387 Fuse holder terminal	

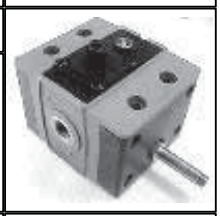
Mechanical Spare Parts List

15-DY-A003 Cool air ass'y	
15-GIC-A040 165mm metal ring green cup assembl	
15-IDS-060 Double acting ball screw (DIA.20mmX788mm)	
15-IDS-120 20mm ball screw nuts c-flange (1512-1-7013)	
15-PC-680 0.7mm Optics scale for PLC (1.5X20X177.7mm)	
15-PFT-240 M6 elbow grease nipple	
15-WT-A140 Up/down platform ass'y with X Y table	
20-PFT-080 M6 straight grease nipple	
21-MB-131 Gray sponge (53X72X85mm)	

AN12-PC-091 20N runner block (HSR20R1SS)	
AN12-PC-120 Tapered roller bearing (30302) O.D42mm XI.D15mm XL14.25mm	
CMIC-490.01 Ink cup set up unit (W.208mmXL.270mm XH.25mm)	
DRE70-061.02 Coupling (Dia.14mm X Dia.14mm) (SFC-050SA2-14B-14B)	
DRE70-090 Lock nut washer (ANO2) O.D.22mm X I.D.12mm X L.5mm	
DRE70-100 Lock nut washer (O.D.25mm X I.D.15mm) (AW02)	
DRE70-111.01 End support ball bearing (6302) O.D42mm X I.D15mm X L.13mm	
ICH-A180 Dia.165mm ink cup holder ass`y	
MT-815 Grease gun (bulk 400C.C)	

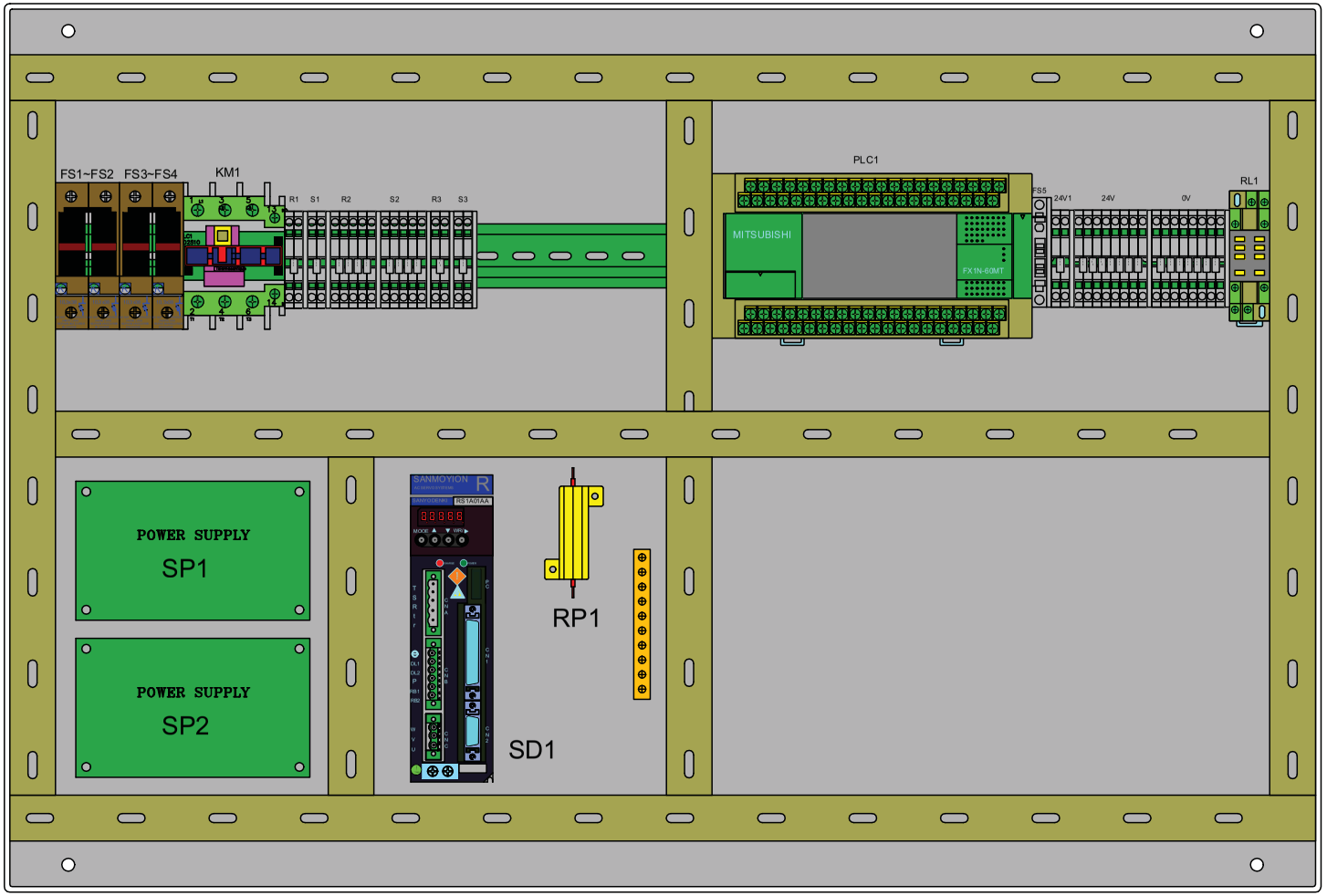
TB165-PC-130	
Registration spring rubber (O.D.50mm I.D.20mm L.40mm)	

Pneumatic Spare Parts List

15-DY-A210 Flexible hose assembly (1/8"XL.210MM)	
15-PAH-011.01 PUN-8 AIR HOSE (O.D.8mm I.D.5.5mm) (EX 14-G-J 04)	
15-PAH-021.01 PUN-6 AIR HOSE (O.D.6mm I.D.4.15mm) (EX 06-G-J 04) (200m/ROLL)	
15-PAH-040 PUN-12 TUBE (I.D.8mm O.D.12mm US98A1280LB)	
15-PVA-060 Solenoid valve (MFHE-3-1/4-B)	
15-PVA-090 Solenoid valve (MFH-5-1/8-B)	
21-PSU-032 Filter regulator (LFR-1/4-DB-7-5M-MINI+ MA-40-10-1/8-EN)	
AN10-PSU-021 Filter regulator (LFR-1/4-D-MINI 159631)	
AP200-PCY-010 Pad stroke stopper cylinder (CDQ2B25-10T)	

HVA100-PSA-010 Hydraulic shock absorber (AC1412-S) M14X1.5 THREAD L.99mm	
KP100-PFR-011 1/8" Flow regulator (ASC100-06)	
KP150-PFR-011 Flow regulator (ASC200-08)	
KSDTT-PFT-151 1/4"pub qui ck L-connector 12mm (NPQS-F-L-R14-Q12)	
TB165-PCY-020 lnk cup platform cylinder (L-CDM2E32-200)	

Electrical Control

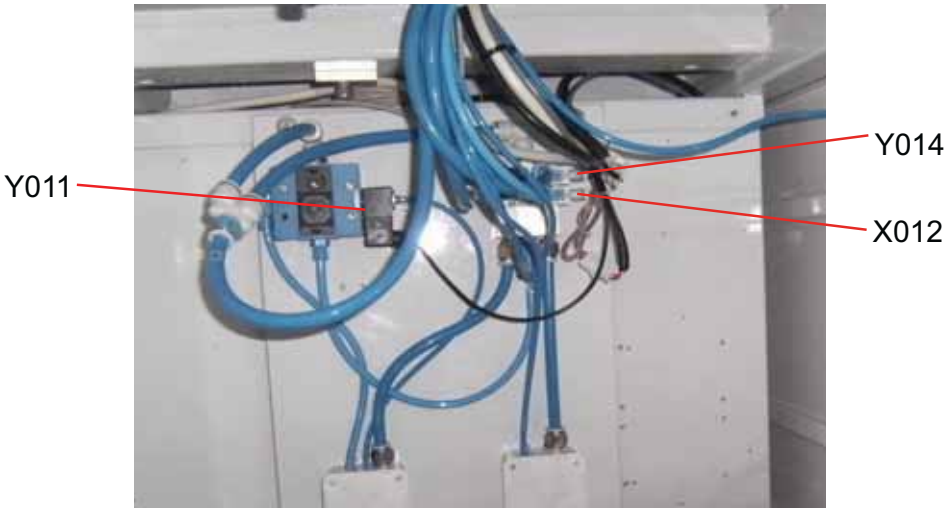


Control Components List

Symbol or Name	Kent Part NO.	Description & Spec.
RP1	KSD130-EC-000	METAL RESISTOR 47OHM/50W
SP1~SP2	EM-EC-040	24V/2.7A POWER SUPPLY
SD1	DRE70-EC-022	PAD CARRIAGE SERVO MOTOR DRIVER
PLC1	MPOS-EC-100	FX1N-60MT PLC
RL1	KSD90-EC-020	DC24V 10A RELAY
FS1~FS2	KSDTT-EC-112	10A 500V FUSE
FS3	KSDTT-EC-111	4A 500V FUSE
FS5	15-EC-751	2A SLOW BLOW FUSE
KM1	KPOS-EC-621	32A/220V CONTACTOR

Components Layout

Valves Location:



Y011------ Main air solenoid.

Y012------ Ink cup platform in/out solenoid.

Y014------ Pad stroke up/down solenoid.