



SEPAS CO. (ALETAHA BRS.)

TRADE OFFICE: NO. 2 , UNIT 12 KOUHESTAN BLD.,
KOUHESTAN 11, NORTH PASDARAN, **TEHRAN , IRAN.**

TELS.: (021) 2831753-5 FAX: (021) 2831751

SERVICE & SUPPORT OFFICE: NO. 43, TABATABAI MOGHADAM ALLEY,
AFTER BAHAR ST., EAST TALEQANI AVE., TEHRAN.

TELS.: (021) 7503564 - 769803 FAX: (021) 7505639

CONTENTS

WARNING

To take more advantage of your printer, recommended to study the contents of this leaflet carefully



Table of CONTENTS

1	Preface	2
2	Mechanical installation	4
3	Operator's panel	5
4	Installation	7
5	Parameters adjustment	12
6	Errors	14
7	More information about the outputs and inputs of power supply	16
8	Electric Circuit	19
9	Pneumatic	22
10	Pneumatic circuit/open ink cup system only	24
11	Pneumatic Circuit	28
12	An introduction to shuttle	30
13	Table - Different state of PP150	32



1



1

PREFACE

Characteristics of Printer Model PP-150

- 1 To get the best quality result, all the moulding process is done by using aluminium mold which has light weight.
- 2 Having the best imported pneumatic system (connectors-solenoid valves- cylinders etc...) for more durability and stability.
- 3 The horizontal & vertical shafts are rigid chrome coated to get more abrasion resistance .
- 4 Having precise printing, there are two auxiliary guide rods for vertical jack
- 5 Cross-table is equipped with micro adjusted switch and star knob for precise printing (length,width and angle).
- 6 Cross-table can be joined to your set or can be used separately . In this case, you can easily install conveyor or shuttle to your system.



7 Your printer is equipped with open and close ink cup system. Cup diameter is 90 mm. Therefore, using a separate cylinder to moving 4 cups on cliché is its advantage .

8 Data can be saved in 5 available languages as following :
1. English 2. Persian 3. Arabic 4. Turkish 5. Russian

9 Equipped with an intelligent electric board

- Having an effective software design yet simple use .
- Having an effective software against common noises.
- Due to the intelligent electric board, all accessories such as horizontal cup table, shuttle, conveyor which are connected to your set, it will be registered on the first line of LCD

Note :

a) If your working place is located in the area with periodic current , it is recommended to use a voltage stabilizer

b) Connect the body of printer to earth wire or to ground or the nearest cold water pipe.

c) Do not keep printer near to three-phase unit or noise maker .

d) compressor should be kept more than 5 meters away from printer.

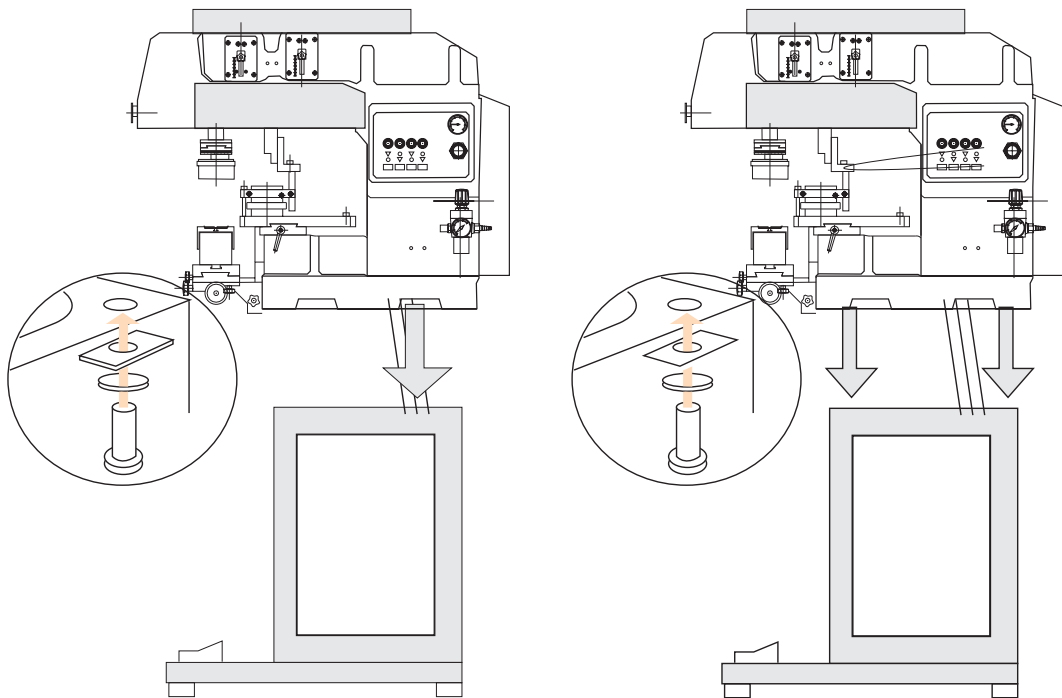
e) It is recommended to install next to compressor an hygroscope and a valve to discharge the water stored in pipe lines.



2

Mechanical installation

Please put the main body over its stand and fix them by 4 pcs. Bolt no. M-12

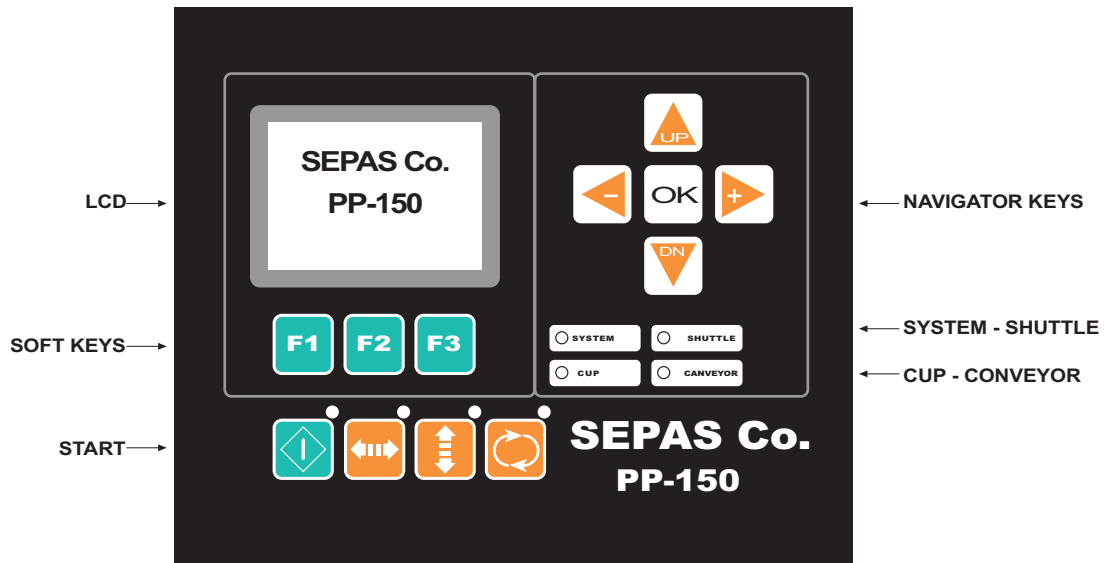


4








3

Operator's panel







HORIZ. VERT. TABLE

Control system is as detailed bellow:

- 1 LCD
- 2 Soft Keys or **F1** & **F2** & **F3** with different operations
- 3 Navigator or  &  &  &  & : Change parameters and operation type




- 4 Start or  : start / end automatic cycle
- 5  Vert /manual state: vertical movement
- 6  Horiz /manual state: horizontal movement
- 7  Table/manual state: shuttle or conveyor movement
- 8 **System:** Shows the errors of horizontal or vertical micro-switches or hardware operations.
- 9 **Cup:** Shows errors of cup / right or left micro- switches
- 10 **Shuttle:** Shows errors of shuttle / sensors 1-4
- 11 **Conveyor:** Shows errors of conveyor / one of the micro-switches



4

Installation

When you turn on your printer, the control system will be settled as shown in figure (a). If you press  you will enter to the main control menu .

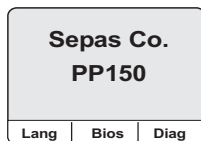








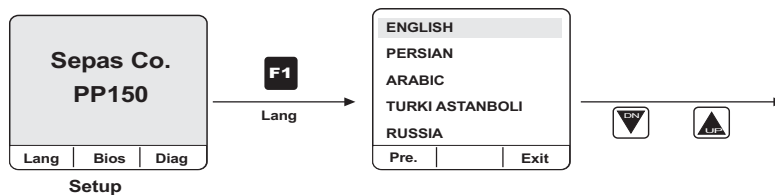
figure (a)- setup position



In setup position in order to have a clear display image, you can adjust display light by pressing  ,  .

By pressing  &  , you can change language.

By pressing  &  , you can select language.

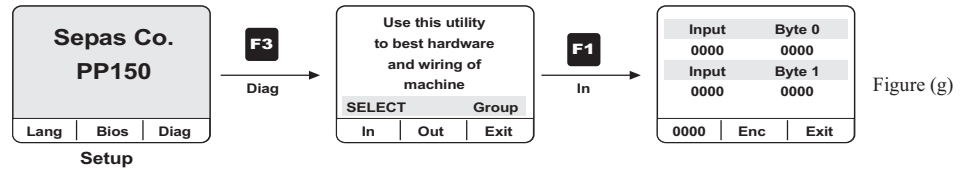
When selecting is done, the control system will reset automatically



 is only for operation test at the time of manufacturing. In normal operation, if you press this key  , it will only return your system to reset position.



- Figure (g)**
- By pressing **F3** , your control system will enter to diagnostic program or select group or inputs/outputs or testing soft ware or hard ware .
 - F1** For testing inputs
 - F2** For testing outputs
 - F3** To exit from (DIAG) position. Your system will reset automatically



- In Diag or Select Group, if you press **F1** you can test 16 digital inputs in 2 lines and 4 groups /4 bytes (0 &1) :
- Top line/right four bytes /right group: down sensor - up sensor- rear micro-switch– front micro-switch First line/left four bytes / right group: void (for test) – void – left cup– right cup
- Lower line / right four bytes /right group: sensor 2 (for test)- sensor 3 – sensor 4 – sensor 1 shuttle and Lower line/left four bytes / right group: for test – conveyor diagnosis – shuttle diagnosis– pedal – void.

If printer has cup table - when micro-switch is operating , byte is 0

If printer has shuttle or conveyor, byte is 1

Shuttle includes 4 sensors . Conveyor includes 2 electric micro-switches . In this case micro-switch no.1 replacing sensor 1 and micro-switch no.2 replacing sensor 2 .

By turning on/off micro-switches, its byte will become 0 and 1 .

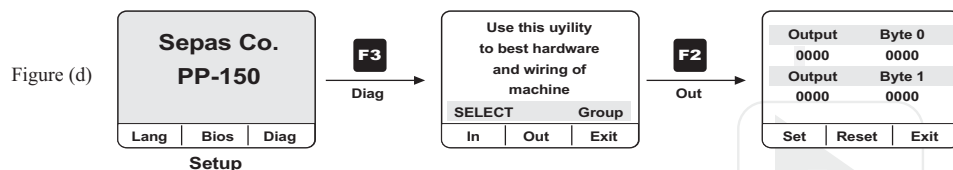






Figure (d)



Figure (d) By pressing **F3** , system control returns to Diag state and if you press **F2** Output test appears on your display with 16 digital outputs in 2 lines and 4 groups of 4 bytes (0 & 1) .

You can choose your output by pressing  &  &  &  and you can make it active by pressing **F1** and inactive by pressing **F2** . Please note in normal case , all outputs are in reset or zero state .

Top line-right 4 bytes- from right: right solenoid cup – left cup– short cylinder shuttle – long cylinder shuttle

The rest left byte – from right: horizontal cylinder /backward and horizontal cylinder/forward – vertical cylinder /downward – vertical cylinder /upward

Under line-4 bytes – from right :solenoid valve –ejector – void-void and the left 4 bytes are the safety lock of system and must be left unchanged.

Note : If your printer has conveyor you will have cylinder solenoid-conveyor lock instead of short cylinder shuttle and also you will have solenoid conveyor instead of long cylinder shuttle .



By pressing **F3** control system returns to Diag state and by repressing **F3** it will return to reset position automatically .We can enter from set up menu to the main one by START key.

First: vertical jack is up, horizontal jack is back

But if your printer has cup

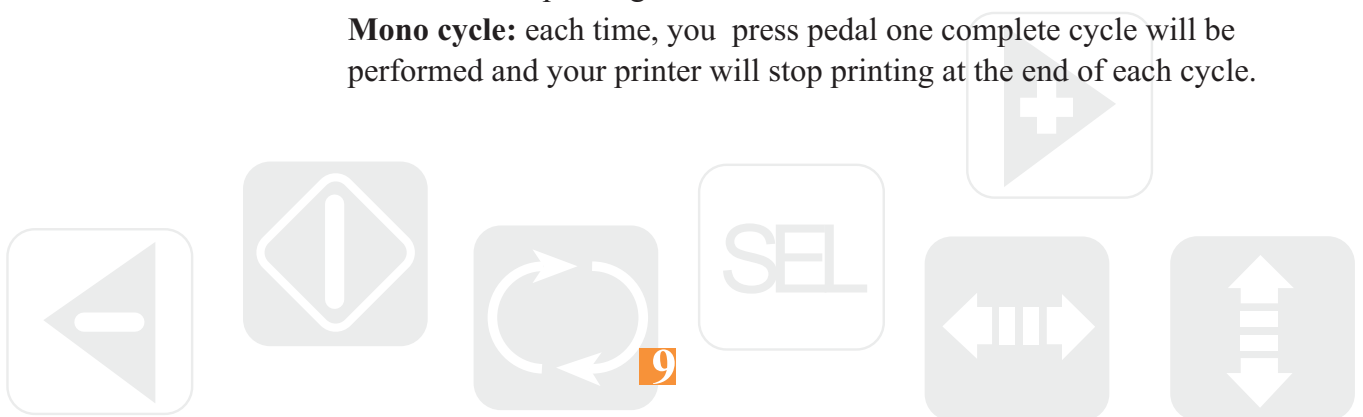
First: vertical jack is up, Horizontal jack moves forward or stops forward.




Then , cup moves left or stops left. Now all accessories which are connected to printer are already registered and you can view their operation type on your display.




By pressing  and  you can change printing cycle.

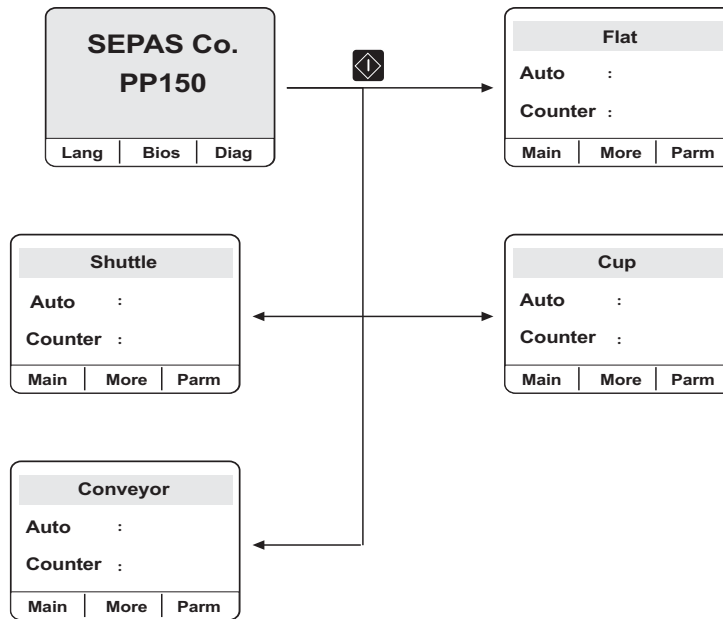
Automatic: We press START. Printing continues due to the data of parameters. To stop printing please repress START . In auto print, whenever you press pedal the auto cycle will stop and if you repress, it re-continues printing


Mono cycle: each time, you press pedal one complete cycle will be performed and your printer will stop printing at the end of each cycle.






While performing any of above cycle, your printer will be settled in Manual state and you can control the following by  and  and  manually.

-  for horizontal moving
-  for vertical moving
-  for shuttle or conveyor



Figur g We can return from set up to main menu by pressing  and as your printer is connected to table, cup system will be registered instead of plain printing.

You can select auto or mono cycle by pressing  and .

Figur d We can return from set up to main menu by pressing  and as your printer is connected to shuttle, shuttle will be registered instead of plain printing.

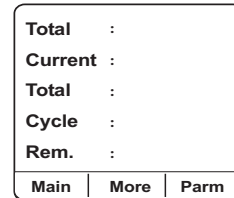
Figur v you can select auto or mono cycle by pressing  and .

Figur y





Figur y



Figur y

Note : In set up position, you can return to main menu by pressing **Start**. And with following data:

First Line : print method

Second Line : print type

Third Line : cycle record number

By pressing **F2** you will receive the following supplement data:

First Line: print method

Second Line: Total output record

Third Line: present output record

Forth Line: Total cycle done

Fifth Line: Total scheduled cycle

Sixth Line: Remaining balance of cycle pre-scheduled .

Note : By pressing **F1** you can return from supplement data to the main one.



5

Parameters adjustment

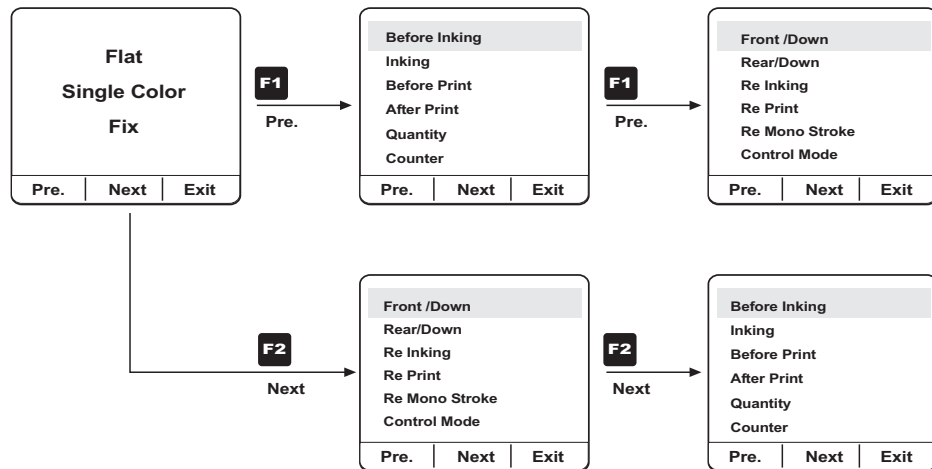
You can enter to the first page by pressing **F3** .

- **First page** including:
print type, no. of colors and the station of shuttle and/or conveyor for which to select ink and station ,you can use up /down keys and for print type (flat or round) you can use **F2** or **F1** keys. Please note the relevant table on the next page.
- **Second page**
 - Down Limit F - front/down: not used
 - Down Limit R – rear/down : not used
 - Ink Peek Rpt - repeat inking
 - Print Rpt - repeat printing
 - Single Rpt - repeat single stroke or repeat mono cycle
 - Control Mode- not used
- **Third page**
 - Before Ink Peek:** pad stop time before inking
 - Ink Peek:** pad stop time when inking
 - Before Print:** pad stop time in front/up before printing
 - After Print:** pad stop time in front/up after printing
 - Total Num:** print no. in auto cycle which will return to zero after reaching to this no.
 - Counter:** print record



12





Adjusting parameters (printer is standstill):

F3 , the main menu (parameter's adjustment) appears.

F1 and **F2** you will go to the next/previous page .

and you can select the parameters you are looking for

for parameter's adjustment

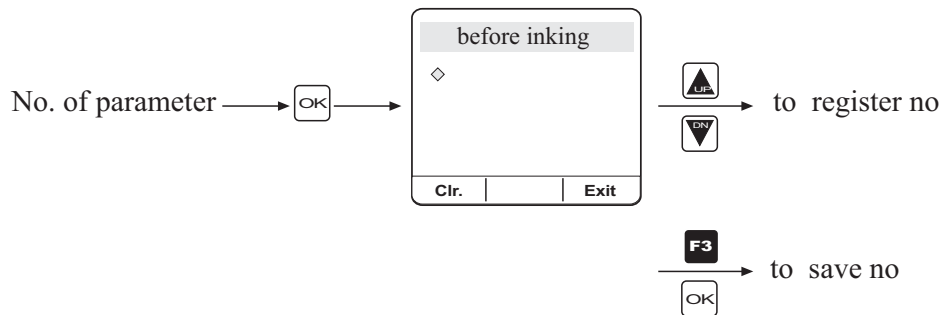
F1 makes parameters to zero

and to increase or decrease parameters

F3 and for saving

F3 returning to the main menu

Note: **F3** or Parm - return to the first page



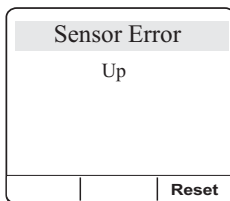
Note : to delete no. please press **F1** or Clr

Note: to entering to the next pages please repeat the same procedure done at the first page



6

Errors



In case of appearing some problems or wrong operation ,your printer stops after a while , and you can see the kind of error on your display with flashing light .

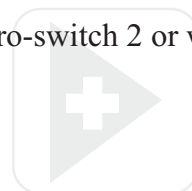
In this case you can reset your printer by pressing **F3** .

Errors List

- **Up/ sensor:** error is for up sensor or vertical cylinder.
- **down /sensor:** error is for down sensor or vertical cylinder.
- **Front/sensor:** error is for front micro-switch or horizontal cylinder
- **Rear /sensor:** error is for rear micro-switch or horizontal cylinder
- **Left cup sensor:** error is for left cup micro-switch or cup cylinder
- **Right cup sensor:** error is for right cup micro-switch or cup cylinder
- **Shuttle sensor 1:** error is for shuttle sensor 1 or shuttle cylinder
- **Shuttle sensor 2:** error is for shuttle sensor 2 or shuttle cylinder
- **Shuttle sensor 3:** error is for shuttle sensor 3 or shuttle cylinder
- **Shuttle sensor 4:** error is for shuttle sensor 4 or shuttle cylinder
- **Conveyor sensor 1:** error is for conveyor micro-switch 1 or wrong operation of conveyor cylinder
- **Conveyor sensor 2:** error is for conveyor micro-switch 2 or wrong operation of conveyor cylinder



14



● **Memory Error**

If you observe the following messages on your display please contact the manufacturer : DATA ERROR, COUNT LIMIT, TIME LIMIT

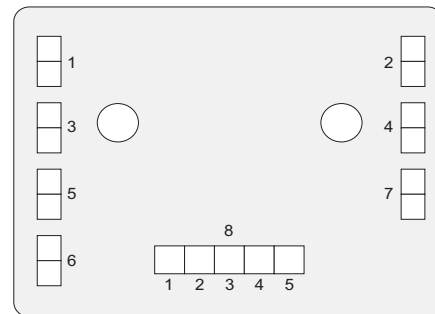
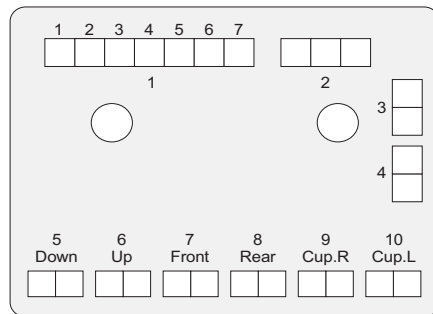
Note : The cup micro-switch has Normal Close system, i.e. in normal case they are on **set** or (1) position or they are connected.

Note : You can return to set up menu by pressing **F3** or reset . You can re-continue printing after the error is removed.



7

More information about the outputs and inputs of power supply



Solenoid valve:

Socket No.1 : is a 7 pin socket as detailed bellow :

1:black 2: brown 3: red 4: orange 5: yellow 6: violet 7: grey

Socket No.2 : is a 3 pin socket (cup micro-switches) 1: black
2: violet 3: grey

Socket No.3 : is a 2 pin socket (2 Series wire of the right cup)

Socket No.4 : is a 2 pin socket (2 Series wire of the left cup)

Sockets 5-10 is for (wires of the solenoid valves)

No.5 : Bobbin for vertical cylinder /downward

No.6 : Bobbin for vertical cylinder /upward

No.7 : Bobbin for horizontal cylinder /forward

No.8 : Bobbin for horizontal cylinder/backward

No.9 : Bobbin for cup/right

No.10: Bobbin for cup/left



Note : as the solenoid valve is single bobbin, its wire should be connected to No.6/up

More about sensor board

Socket No.1 : for up sensor /rear sensor frame

Socket No.2 : for up sensor/front sensor frame

Socket No.3 : for down sensor/rear sensor frame

Socket No.4 : for down sensor/front sensor frame

Socket No.5 : for rear micro-switch /horizontal jack

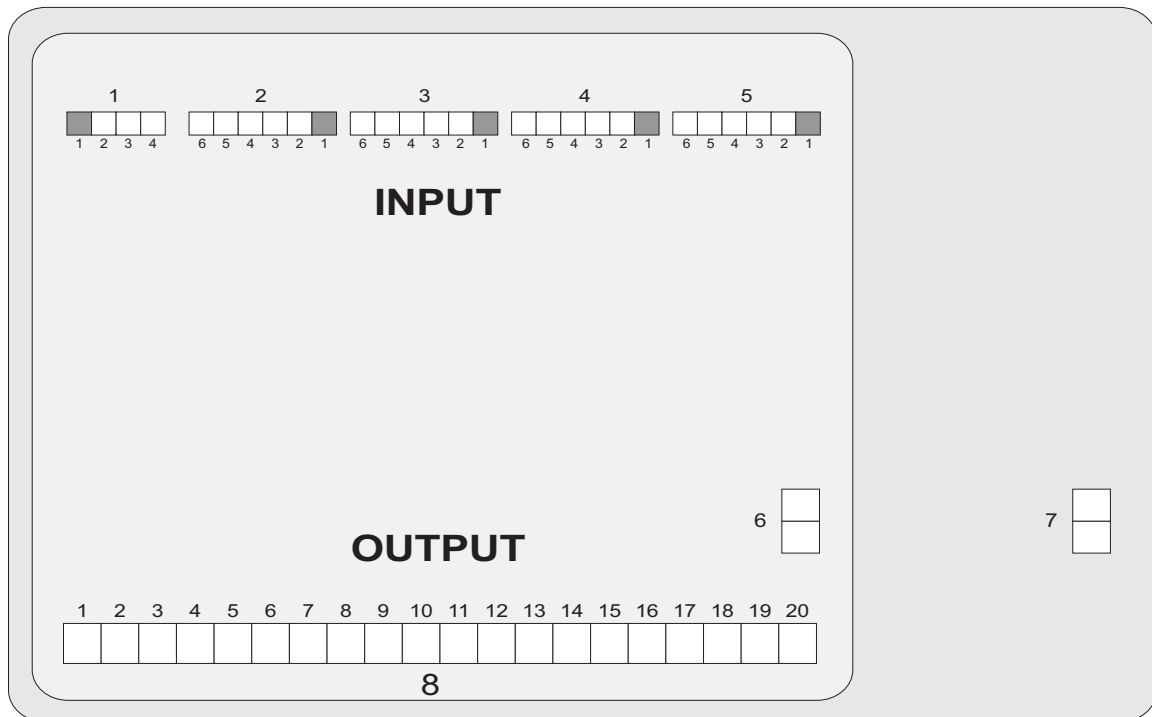
Socket No.6 : for rear micro-switch/jack for close ink cup table

Socket No.7 : for front micro-switch/horizontal jack

Socket No.8 : for micro-switches & sensors :

1: common - 2 : down - 3 : up - 4 : front - 5 : back

Note: wire coloration is on the standard basis either for inputs or outputs : black-brown-red-orange-yellow-green-dark blue-violet-grey and white.



Mother Board



INPUT : Nos. : 1-2-3-4-5-6-7

OUTPUT: Nos. : 8

No.1: unused

No.2: socket (including 6 hollow parts) for front & rear micro-switches / up & down sensors No.1: common No.2 : front No.3: rear No.4: up No.5 : down No.6: void

No.3: socket (including 6 hollow parts) for cup micro-switches. No.1: common No.2: right cup No.3: left cup No.4: void No.5: void No.6: void

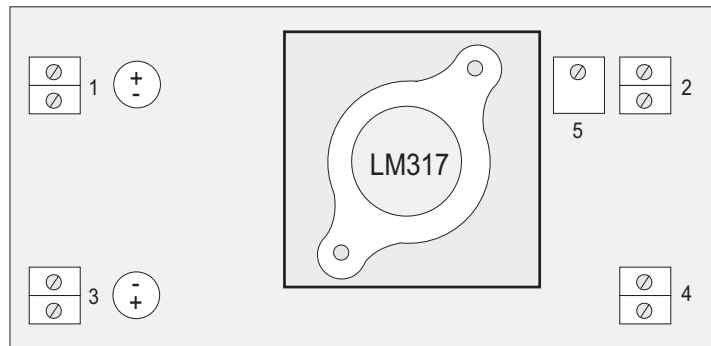
No. 4 : socket (including 6 hollow parts)for shuttle and conveyor No.1 : common **No.2** : sensor (1) **No.3** : sensor (4) **No.4**: sensor (3) No.5 sensor(2) No.6 : void

No.5 : socket (including 6 hollow parts) No.1 : common No.2: void No.3: pedal No.4: shuttle return No.5: conveyor return No.6: void

No.6: input/ 24 v

No.7: input 16 v

No.8: No.1: void No.2: left cup No.3: right cup No.4: small shuttle No.5: big shuttle No.6: front (horizontal) No.7: rear (horizontal) No.8: up(vertical) No.9: down(vertical) No.10: common -No.11: void -No.12: ejection No.13:eject No.14: blowing valve -No.15: void No.16:void -No.17: void No.18: void No. 19: void No.20: common

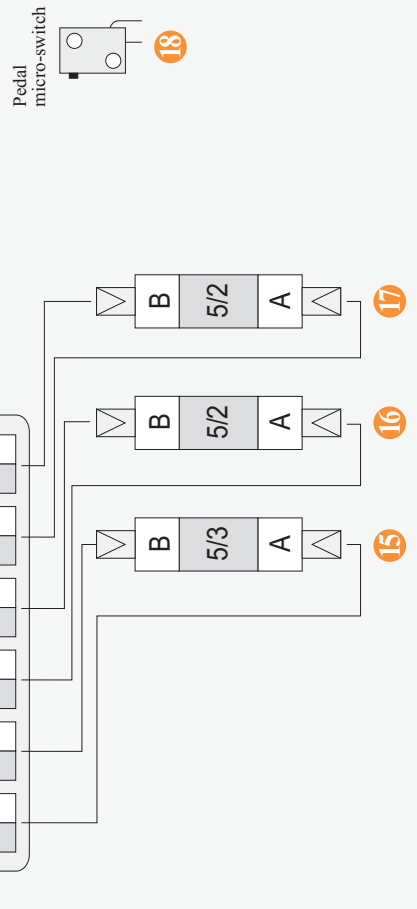
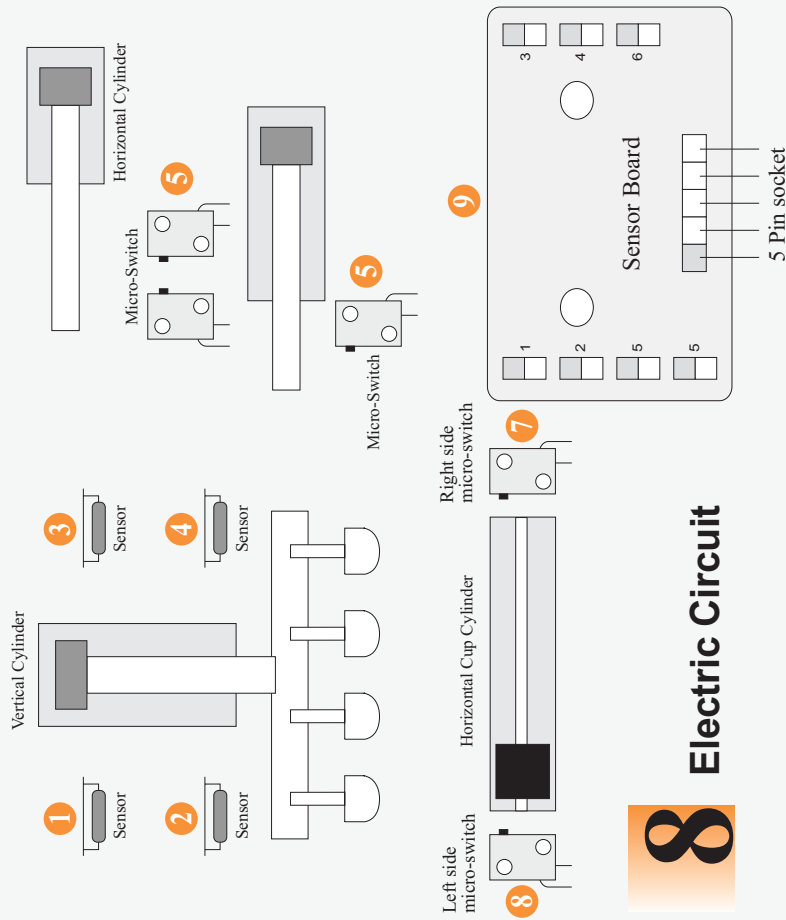


FILTER BOARD

Note :

- No.1** : terminal for output/transformer wire 16V AC-black
- No.2** : terminal for output /adjusted between 9.5-11V DC – black
- No.3** : terminal for output/transformer wire 24V AC – brown
- No.4** : terminal for output/transformer wire 28DC-30 – orange
- No.5** : multi turn to adjust voltage from 9.5-11 V DC





Electric Circuit

- 1** Sensor no.1 from rear sensor plate connected to sensor board socket no.1 by a wire.
- 2** Sensor no.2 from rear sensor plate connected to sensor board socket no.2 by a wire.
- 3** Sensor no.3 from front sensor plate connected to sensor board socket no.3 by a wire.
- 4** Sensor no.4 from front sensor plate connected to sensor board socket no.3 by a wire.
- 5** Including 2 micro-switches . one(horizontal jack) connected to sensor board socket no.5 and one (jack /close ink cup system) connected to the second socket no.5/sensor board.
- 6** Electric micro-switch /front horizontal jack connected to sensor board socket no.6.
- 7** It is the electrical micro-switch at the right side of the horizontal cup connected to the right side socket by a cable.
- 8** It is the electrical micro-switch at the left side of the horizontal cup connected to the left side socket by a cable.
- 9** It is the sensor board which is a connector between all sensors and mother board.
- 10** Transformer 220/16v
- 11** Transformer 220/16v
- 12** Filter board to adjust mother board /voltage from 9v Dc to CPU 11v Dc and also the solenoid valves/voltage 24v DC.
- 13** It is the solenoid valve board which is a connector between all solenoid valves and mother board.



20



- 14** It is the main board with three stages:
first stage : IO or outputs & inputs
second stage : CPU/mother board
third stage :switchboard/mother board
- 15** It is the 5/2 solenoid valve/cup vertical movement and is manufactured by SMC Co.
A is connected to socket no.3 by a wire
B is connected to socket no.4 by a wire
- 16** It is the 5/2 solenoid valve/ cup horizontal movement and is manufactured by SMC Co.
A is connected to socket no.3 by a wire
B is connected to socket no.4 by a wire
- 17** It is the 5/2 solenoid valve/cup horizontal movement and is manufactured by SMC Co.
A is connected to socket no.5 by a wire.
B is connected to socket no.6 by a wire.
- 18** It is pedal/micro-switch which is connected by a cable to the back part of your printer .

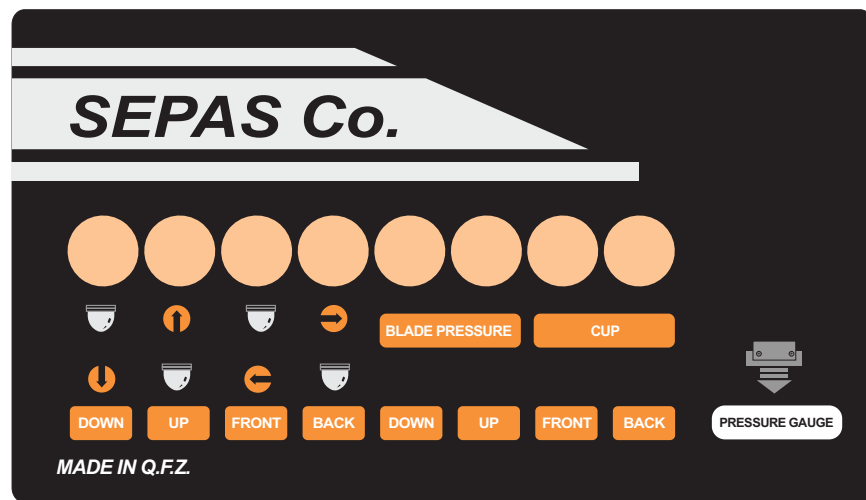
If your printer does not have the horizontal cup, item nos. : 7,8,17 are not installed .

If the ink cup system of your printer is not a close one, item no.5 /micro switch and cylinder are not installed.



9

PNEUMATIC



1 Side label/open & close ink cup system - from left to right:

1. Down : vertical cylinder/down
2. Up : vertical cylinder/up
3. Front : horizontal cylinder /front
4. Back : horizontal cylinder /back
5. Down : doctor blade cylinder /down
6. Up : doctor blade cylinder /up
7. Front : cylinder of close ink cup system/front
8. Back : cylinder to close ink cup system/back
9. place to install blade/regulator

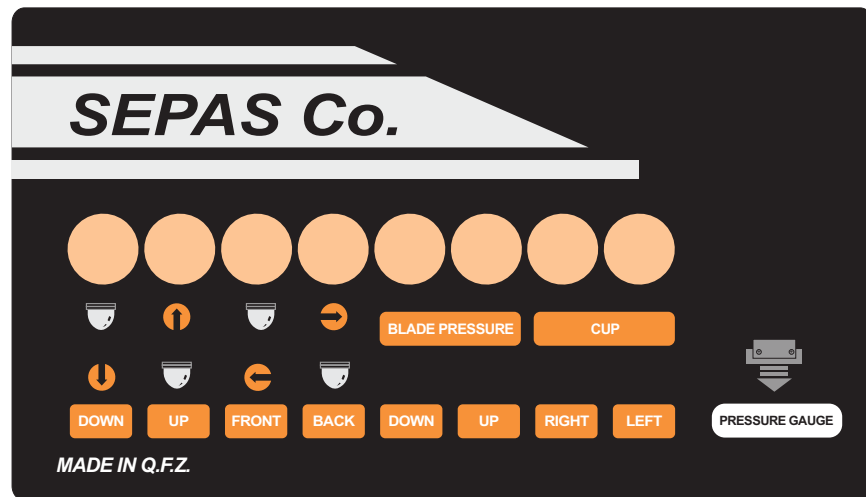


22



2 Side label/horizontal cup system - from left to right :

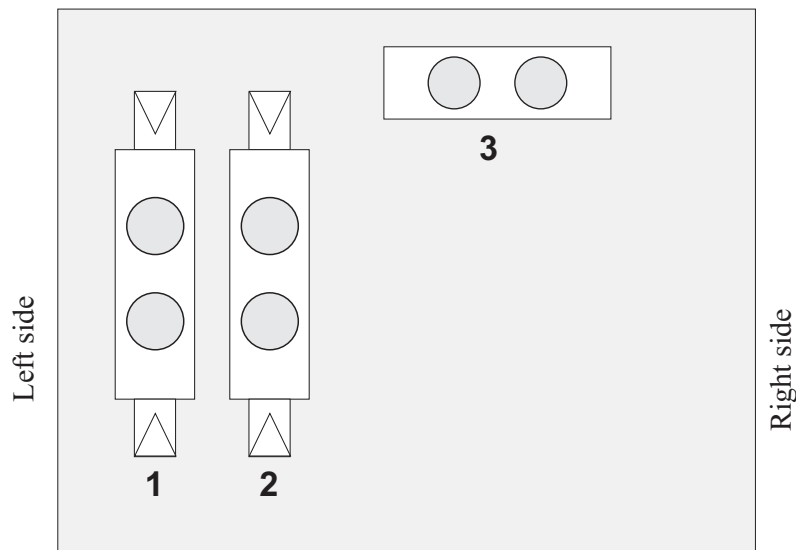
1. Down : vertical cylinder/down
2. Up : vertical cylinder/up
3. Front : horizontal cylinder/front
4. Back : horizontal cylinder/back
5. Down : unused
6. Up : unused
7. Right : horizontal cup/right
8. Left : horizontal cup/left
9. unused



10

PNEUMATIC CIRCUIT/OPEN INK CUP SYSTEM ONLY

Figure A : opposite side



For open ink cup system only or for close ink cup system only

Figure a :

1. two bobbin solenoid valve for vertical movement is 5/3.
2. two bobbin solenoid valve for horizontal movement is 5/2.
3. the pneumatic valve is for open ink cup system.

In close ink cup system , the solenoid valve is installed for horizontal movement instead of item no.3 (pneumatic valve) .



24



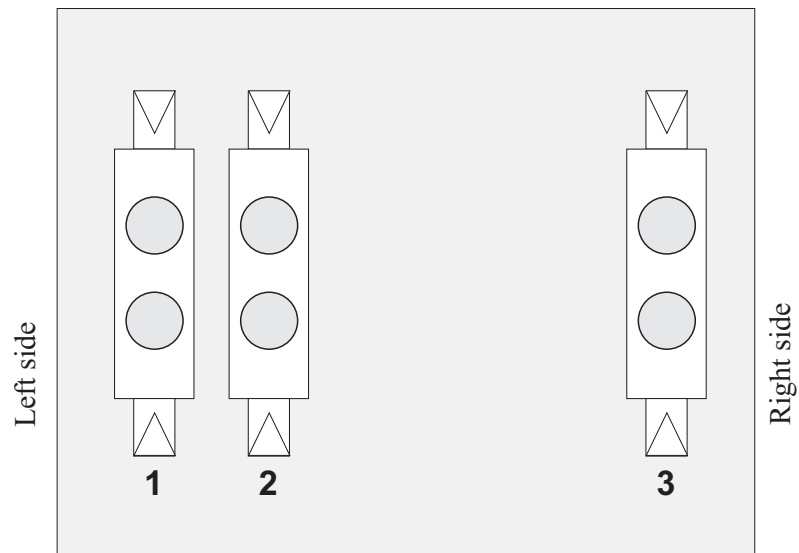


Figure b : opposite side

Figure b:

1. Two bobbin solenoid valve for vertical movement is 5/3
2. Two bobbin solenoid valve for horizontal movement is 5/2
3. Two bobbin solenoid valve for cup horizontal movement is 5/2

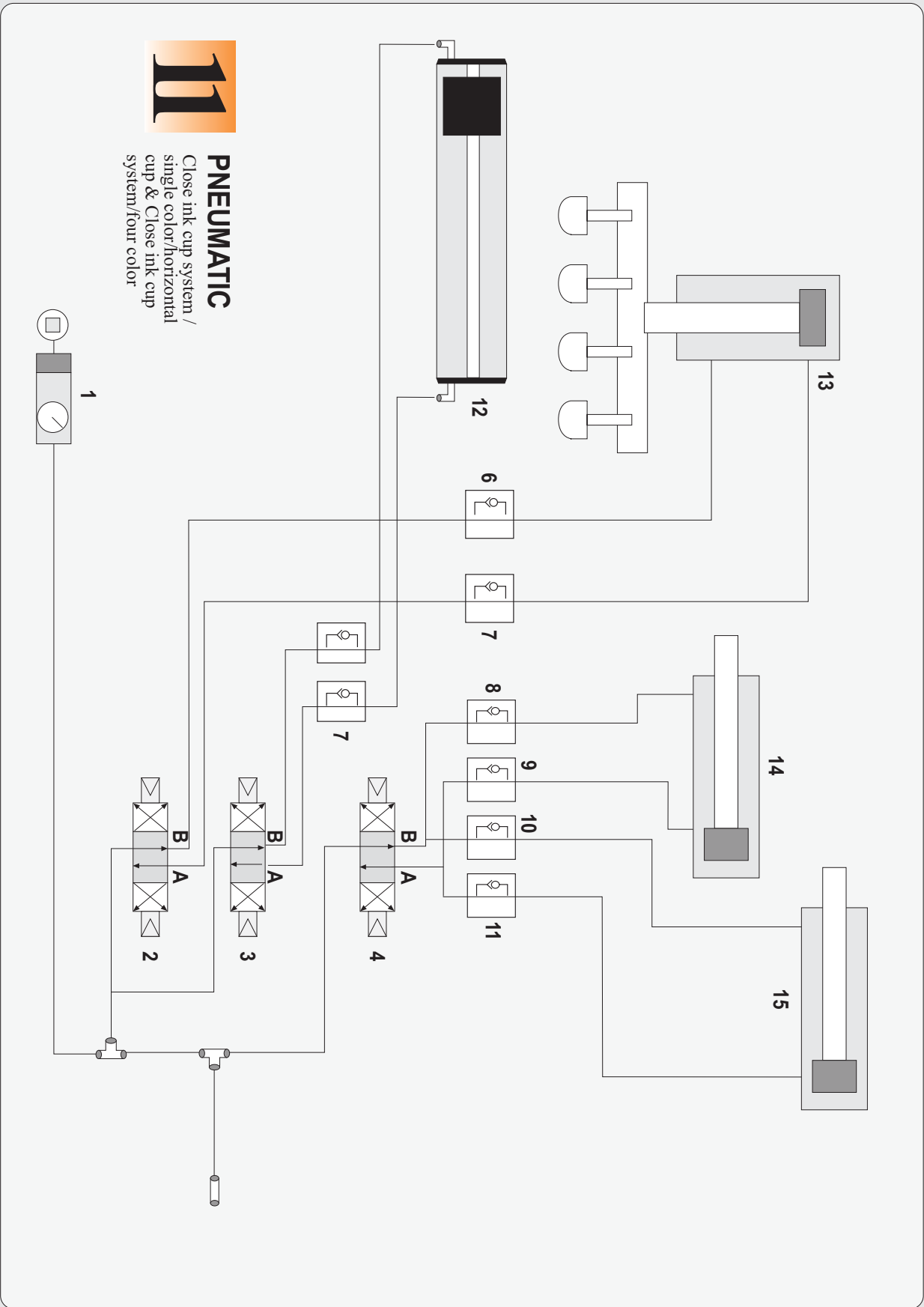


PNEUMATIC

(OPEN INK CUP SYSTEM ONLY PNEUMATIC CIRCUIT)

- 1** Main regulator (pressure control valve)
- 2** The two bobbin solenoid valve is 5/3 and is manufactured by SMC Co. and it is for vertical cylinder .
- 3** The two bobbin solenoid valve is 5/2 and is manufactured by SMC Co. and it is for horizontal cylinder.
- 4** Back door coupling is for shuttle
- 5** Front pneumatic micro-switch
- 6** Pneumatic valve
- 7** Rear pneumatic micro-switch
- 8** Flow control valve for vertical cylinder/down
- 9** Flow control valve for vertical cylinder/up
- 10** Flow control valve for horizontal cylinder/back
- 11** Flow control valve for horizontal cylinder/front
- 12** Flow control valve for blade cylinder /down
- 13** Flow control valve for blade cylinder/up
- 14** Blade is manufactured by SMC Co.
- 15** Horizontal cylinder is manufactured by SMC Co.
- 16** Vertical cylinder is manufactured by SMC Co.





PNEUMATIC
 Close ink cup system /
 single color/horizontal
 cup & Close ink cup
 system/four color

PNEUMATIC Circuit

(close ink cup system for four color only OR single color/horizontal cup)

- 1** Pneumatic main regulator (pressure control valve)
- 2** The two bobbin solenoid valve is 5/3 and is manufactured by SMC Co. and it is for vertical cylinder .
- 3** The two bobbin solenoid valve is 5/2 and is manufactured by SMC Co. and it is for horizontal cup cylinder.
- 4** The two bobbin solenoid valve is 5/2 and is manufactured by SMC Co. and it is for horizontal cylinder and close ink cup system cylinder
- 5** Back door coupling is for shuttle
- 6** Flow control valve for vertical cylinder/down
- 7** Flow control valve for vertical cylinder/up
- 8** Flow control valve for horizontal cylinder/back
- 9** Flow control valve for horizontal cylinder/front
- 10** Flow control valve for close ink cup system cylinder/back
- 11** Flow control valve for close ink cup system cylinder/front
- 12** Shaftless cylinder /horizontal cup
- 13** Cylinder/vertical movement is manufactured by SMC Co.
- 14** Cylinder/horizontal movement is manufactured by SMC Co.
- 15** Cylinder /close ink cup system is manufactured by SMC Co.
- 16** Flow control valve is for moving cup to right
- 17** Flow control valve is for moving cup to left.

If your printer is with horizontal cup, item nos. : 10,11 & 15 are not installed

If your printer is only with horizontal cup, item nos. : 3,12,16 & 17 are not installed




29




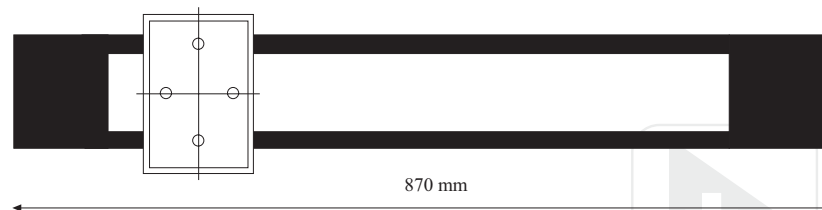
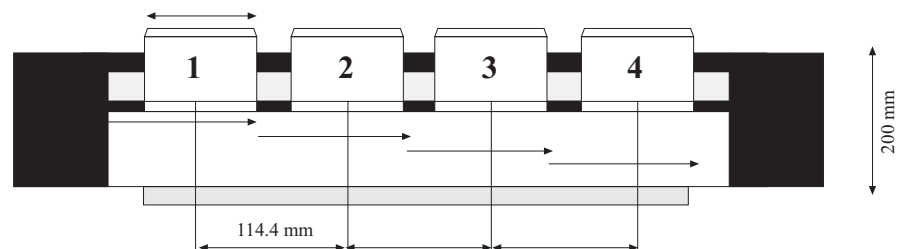
12

An introduction to shuttle

- Shuttle is designed specially for two, three and four color flat and round printing. You can connect it to your system by a 15 pin computer socket plus a hose no.6
- As your printer has intelligent system, when shuttle is connected to your system, the word of shuttle will be registered on your system.
- After you turn on your system by pressing  you will enter to the main menu. Then by pressing **F3** you will enter to the first parameters menu including print type, number of colors and no. of station of shuttle & conveyor.

 and  is → no. of colors & station of shuttle & conveyor

 and  is → print type (flat or round)



- The station of shuttle starts from each center as designed on the cliché. The distance between each station is adjustable.

max. length of shuttle	350 mm.
max. print – close system-4 color	80 mm.
max. print- open system-4 color	60*120 mm.
max. print – round system	80*350mm.
max. print speed – 4 color	800 cycle
max. print speed – round system	1000 cycle
air consumption pressure	6 bar
Power supply	24 V Dc
Dimension (L*W*H)	1750*920*1000 mm.
Weight	197 kg.



Table - Different state of PP150

Without shuttle and conveyor				With shuttle				With conveyor				
Without cup		With cup		Without cup		With cup		Without cup		With cup		
ROUND	FLAT	ROUND	FLAT	ROUND	FLAT	ROUND	FLAT	ROUND	FLAT	ROUND	FLAT	
-	-	-	-	-	-	-	1-2-3-4	-	-	-	-	4COLOR
-	-	-	-	-	-	-	1-2-3	-	-	-	-	COLOR
-	-	-	-	-	-	-	2-3-4	-	-	-	-	COLOR
-	-	-	1-2	-	-	1-2,3-4	1-2	-	-	-	-	COLOR
-	-	-	-	-	-	-	1-3	-	-	-	-	COLOR
-	-	-	-	-	-	-	1-4	-	-	-	-	COLOR
-	-	-	-	-	-	-	2-3	-	-	-	-	COLOR
-	-	-	-	-	-	-	2-4	-	-	-	-	COLOR
-	-	-	-	-	-	-	3-4	-	-	-	-	COLOR
*	*	*	*	*	*	1-2	*	*	*	*	*	SINGLE COLOR
-	-	-	-	-	-	1-3	-	-	-	-	-	SINGLE COLOR
-	-	-	-	-	-	1-4	-	-	-	-	-	SINGLE COLOR
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	