Operation Instruction Manual

High Speed Double Faces Labeling Machine
（Edition1.0）
CONTENT

1 Introduction .................................................................................................................. 4

1.1 System component ................................................................................................. 4

1.2 System parameter: .................................................................................................. 4

1.3 Human-computer interface: .................................................................................... 4
  1.3.1 Human-computer interface ............................................................................. 4
  1.3.2 Operation system start: .................................................................................. 4
  1.3.3 Boot screen: ..................................................................................................... 5
  1.3.4 Operation running interface: .......................................................................... 5
  1.3.5 Parameter set interface: ................................................................................. 6

2 Overview ..................................................................................................................... Error! Bookmark not defined.

3 Principle and Structure ............................................................................................ 7

3.1 Principle and Structure ......................................................................................... 7

3.2 Main components .................................................................................................. 8

3.3 Parameter ............................................................................................................... 8

4 Operation procedure and adjustment ..................................................................... 9

4.1 Procedure flow ...................................................................................................... 9

4.2 Check the sensor is well. ....................................................................................... 9

4.3 Adjustment of the labeling machine .................................................................... 9

4.4 Stripper parallelism adjustment .......................................................................... 10

4.5 Adjustment of bottle space and correct device .................................................... 10

4.6 Adjustment of top-pressing device ..................................................................... 11
4.7 Adjustment of pressing wheel ..........................................................11

5 Attentions ..........................................................................................12

6 Common faults analyses .................................................................12

7 Maintenance ......................................................................................13

8 Appendix ..........................................................................................13

8.1 Optical fiber sensor specification (See appendix 1) .......................13

8.2 Sketch map chart (See appendix 2) ...............................................13

8.3 Electrical principle chart (See appendix 3) ...................................13

9 Packaging lists and After-sale service .............................................14

9.1 packaging list ...............................................................................14

9.2 Product certificate .........................................................................14

9.3 Warranty Card ...............................................................................15

9.3.1 From date of sale, the warranty as follow: ...............................15
9.3.2 Check the machine model and machine no. .............................15
9.3.3 Safe-keeping the invoice and warranty card ..............................15
1 Introduction

This machine adopts DELTA-DVP14SS11T2 (Delta) as the core control part for good working: reasonable electrical design and human-computer software design, providing high performance and easy operation.

1.1 System component:
Human-computer interface
Programmable Logic Controller (PLC): DELTA-DVP14SS11T2 (Delta)
Optical fiber sensors: keyence (Japan)

1.2 System parameter:

Environment: Temperature 5°C-50°C  Humidity 20%-90%
Power supply: Input AC 220V ± 10%(50Hz) Output DC 24V ± 2V
PLC: Input AC 220V 8 Transistors Output DC no contact 6 Transistors

1.3 Human-computer interface:

1.3.1 Human-computer interface: 5.7 " FSTNLCD Touch screen

1.3.2 Operation system start:

Step1 Link the machine to power supply 220V.
Step2 Put the Emergency Stop Button in the normal position. (When the machine is out of
work, it can cut off the power immediately by pressing this button.)

Step3 The machine will enter into [Boot Screen] 2 s latter.

1.3.3 Boot screen:

1.3.4 Operation running interface:

Entering this interface, you can process as follows:

[ON]: Pressing [ON], machine will start to label; Pressing [OFF], machine stops working.

[Front label test]: Pressing [Front label test], the machine enters testing state. Each pressing,
each label feeds. The feeding label quantities do not count.

[Back label test]: The same as [Front label test]. Pressing [Back label test], the machine enters testing state. Each pressing, each label feeds. The feeding label quantities do not count.

[Clear]: Pressing this button, the total production will be “zero” and start a new count.

[Language set]: Switching the language: English and Chinese.

[Parameter set]: By pressing, enter into parameter set interface.

1.3.5 Parameter set interface:

[Parameter group]: This group can store a number of parameter setting data, convenient for changes of different size bottles and labels. You can call out the parameter setting data directly from the database without resetting, which will save a lot of time and improve work efficiency.

[Protection impulse]: This is for the protection of the stepper motor, with setting of 200-1000P.

[Back label frequency]: You can set the labeling speed. The unit is Hz. The setting is decided by bottle diameter, label length and the labeling speed you want. Usually, the bigger the bottle is and the longer the label is, the slower the labeling speed is. On the contrary, the labeling speed will be quick. If not, the machine will can not normal working.

[Front label frequency]: The same as [Back label frequency].

[Front label OFF]: The front labeling head will not work if shut this. The back labeling head will continue working for single face labeling.

[Back label OFF]: The same as [Front label OFF].

[Coding delay]: This can set the coding signal connection time, with adjustment of coding depth
and coding time to suit for different type printers. The unit is second.

**[Conveyor OFF]**: This can start and stop the conveyor motor to offer time for the operation people to deal with the bottles on the conveyor. Pressing, the conveyor will stop moving.

**[Coding OFF]**: When the machine is working, you can choose starting the printer or closing the printer. If do not need the printer or stop the printer for a moment, pressing this button.

**[Inverter frequency]**: This is to control the speed of the conveyor.

### 2 Overview

LM-DT-type double faces labeling machine is made to achieve the goal of the rationalization of production design. The whole labeling process is automatic, with easy operation, high speed and nice surface. This labeling machine is mainly applied in food, beverage, pharmaceutical, cosmetic, chemical industry for flat and square bottle single face or two faces labeling.

### 3 Principle and Structure

#### 3.1 Principle and Structure

LM-DT High speed double faces labeling machine is composed of two labeling heads, located in the two sides of the conveyor. When labeling, the processes are as follow:

**Step1** Bottles move on the conveyor driving by the conveyor motor.

**Step2** Bottles will be spaced and corrected by the spacing and correcting device to keep a certain distance from each other. Bottles come to the labeling area.

**Step3** When detecting the bottles, the optical fiber sensor sends the signal to the PLC. After dealing, PLC sends the output signal to the stepper motor.

**Step4** The stepper feeds the label one by one: label comes out from the stripper and stick on the bottle. Also, the back paper will be collected. Label will be made smooth after pressing of the brush.

**Step5** Measuring sensor detects the space between labels. Label will move forwards the same length. Then stepper motor stops moving and label stop feeding.

**Step6** Lastly, bottle will pass through the sponge wheel and the label will be pressing more smoothly. The process over and the next bottle will be labeled.

The machine adopts stepper motor driver, Delta PLC control system, human-computer interface, Keyence optical fiber sensor and some other imported parts: Microsoft control system.
and human-computer interface, smart design and powerful functions. Absorbing many leading-edge technologies, the machine is one of the best labeling machines in the packaging industry. With auto alarm function when meets broken label, no label etc. Optional is a set ribbon coding machine. This machine uses T6 aluminum alloy and stainless steel 304 and other high-quality production, working well in line with GMP standard. LM-DT double faces labeling machine is a very good cost-effective products.

### 3.2 Main components

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Function</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabinet</td>
<td>Support the above parts and protect the Electrical components</td>
<td></td>
</tr>
<tr>
<td>Conveyor</td>
<td>Transporting the bottles</td>
<td>Chain conveyor/Belt conveyor/Roller conveyor</td>
</tr>
<tr>
<td>Labeling head</td>
<td>Unreeling pine</td>
<td>Label tray</td>
</tr>
<tr>
<td>Feeding-label</td>
<td>Driving label moving</td>
<td>Steeper motor</td>
</tr>
<tr>
<td>Label stripper</td>
<td>Strip the label from the back paper</td>
<td></td>
</tr>
<tr>
<td>Bottle-space device</td>
<td>Keeping the bottle certain distance from each other</td>
<td>Bottle-space</td>
</tr>
<tr>
<td>Label-pressing device</td>
<td>Making label smooth on the bottle</td>
<td>Brush and sponge wheel</td>
</tr>
<tr>
<td>Adjust frame</td>
<td>Adjusting all the parts suitable</td>
<td></td>
</tr>
<tr>
<td>Electric control</td>
<td>Control the whole system</td>
<td></td>
</tr>
<tr>
<td>ribbon printing machine / inkjet printer</td>
<td>Printing and coding</td>
<td>Optional</td>
</tr>
<tr>
<td>Smooth device</td>
<td>Make the label smooth</td>
<td>For double or single face labeler</td>
</tr>
</tbody>
</table>

### 3.3 Parameter

Power supply: AC110V/220V 50/60Hz  
Power: 1500W  
Production capacity: 30-150 bottle/min (Speed is adjustable and is decided by bottle
diameter and label length)

Batch number: coding machine motor drive or cylinder drive (optional)

Weight: 300KG

Dimension: 2800mm*1500*1530mm

4 Operation procedure and adjustment

4.1 Procedure flow

Step1 Fix the label roll and adjust the height.
Step2 Adjusting the height of the bottle-bar, top-pressing device, bottle space and correct device
Step3 Turn on the power and photoelectric switch; for printing, it need preheat about 15min.
Step4 Turn on the motors and sensor switch, testing labeling.
Step5 Ensuring no fault, production begins.
Step6 Turn off the machine.

4.2 Check the sensor is well.

See appendix 1 (Optical fiber sensor specification)

4.3 Adjustment of the labeling machine

Loosen the upper and lower fix braces---Change the height of machine by rotating the handwheel---Interlock the braces.
4.4 Stripper parallelism adjustment

The aim: to make the stripper and sponge wheel and the conveyor parallel and at the same level.

a. Stripper downward-sloping

Loosen upper and lower braces---lock the lower brace to make stripper parallel to the bottle---lock the upper brace.

b. Stripper upward-sloping

Loosen upper and lower braces---lock the upper brace to make stripper parallel to the bottle---lock the down brace.

4.5 Adjustment of bottle space and correct device

The distance between the two sponges should in line with the bottle diameter, slightly clamping. Rotating the handwheel in the clockwise direction makes the distance smaller. Otherwise, bigger. Then lock the handwheel.
4.6 Adjustment of top-pressing device

The distance between the top-pressing device and the conveyor should be in line with the bottle height, slightly clamping. Rotating the handwheel in the clockwise direction makes the distance smaller. Otherwise, bigger. Then lock the handwheel.

4.7 Adjustment of pressing wheel

It is similar to the adjustment of bottle space and correct device.
5 Attentions

a. The power is AC220V. Ensure to use ground wire. Before start the machine, be sure good installation.
b. There are two directions of the labeling machine: from left to right and from right to left.
c. Make sure the guide rings below the guide wheel at the same level. The upper guide ring sits besides the label.
d. Make sure the position of the sensor, otherwise it will wrinkle when labeling.
e. Make sure the correct label passing patch.

6 Common faults analyses

<table>
<thead>
<tr>
<th>Faults</th>
<th>Reasons</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Label broken</td>
<td>Over-pressure of Synchronous belt drives pulleys</td>
<td>Loosen the regulating nut</td>
</tr>
<tr>
<td></td>
<td>Stuck of Synchronous belt drives pulley</td>
<td>Add a pad on the Synchronous belt drives pulleys</td>
</tr>
<tr>
<td></td>
<td>Label brakes too much</td>
<td>Loosen brake</td>
</tr>
<tr>
<td></td>
<td>Label over-pressure</td>
<td>Loosen the clamping screw</td>
</tr>
<tr>
<td></td>
<td>Printer over-pressure</td>
<td>Adjust the printer</td>
</tr>
<tr>
<td></td>
<td>Wearing of label bottom</td>
<td>Change the label or adjust guide rail</td>
</tr>
<tr>
<td></td>
<td>Stripper out of position</td>
<td>Adjusting</td>
</tr>
<tr>
<td>b. No label feeding</td>
<td>Check the sensor</td>
<td>Adjusting the sensor sensitivity</td>
</tr>
<tr>
<td></td>
<td>Broken of fiber amplifier</td>
<td>Change new one</td>
</tr>
<tr>
<td>c. Label wrinkle</td>
<td>Hard brush</td>
<td>Change soft one</td>
</tr>
<tr>
<td></td>
<td>Label too quick</td>
<td>Let speed slow</td>
</tr>
<tr>
<td></td>
<td>Bottle too irregular</td>
<td>Change bottles</td>
</tr>
<tr>
<td>d. Label inclined</td>
<td>Label not at the same level</td>
<td>Adjust the label disk</td>
</tr>
<tr>
<td></td>
<td>Too quicker speed</td>
<td>Slower</td>
</tr>
<tr>
<td></td>
<td>Labeling head inclined</td>
<td>Adjust it</td>
</tr>
</tbody>
</table>
7 Maintenance

a. Ensure good connection with the ground wire and install anti-creeping protection switch.
b. For the human-computer interface, no sharp touch and alcohol washing. When dusty, wipe with cotton.
c. When the PLC is electrified, do not change the switches and connectors to avoid damaging the electric control parts.
d. If the machine is long time no using, unplug the power plug.

8 Appendix

8.1 Optical fiber sensor specification (See appendix 1)

8.2 Sketch map chart (See appendix 2)

The following is Label stretching chart.

![Label stretching chart]

8.3 Electrical principle chart (See appendix 3)
9 Packaging lists and After-sale service

9.1 packaging list

LM-DT High Speed Double Face Labeling Machine Package Lists

<table>
<thead>
<tr>
<th>Num</th>
<th>Commodity</th>
<th>Specification</th>
<th>Qty</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Labeling machine</td>
<td>LM-DT</td>
<td>1 set</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Synchronous belt</td>
<td>Sanxing</td>
<td>2 pieces</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Screw driver</td>
<td>Cross</td>
<td>1 Piece</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Screw driver</td>
<td>Straight</td>
<td>1 piece</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Socket head wrench</td>
<td></td>
<td>1 set</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>adjustable spanner</td>
<td></td>
<td>1 piece</td>
<td></td>
</tr>
</tbody>
</table>

All above parts are packing.

Packing test:

Packing date:

9.2 Product certificate

Product certificate Machine is permitted

To leave factory after strict inspection.

Machine commodity ______________________

Model _____________________________

Factory number ____________________________

Inspector_________________________

Date______________________________
9.3 Warranty Card

Warranty Card

9.3.1 from date of sale, the warranty as follow:

a. User must strictly follow the instruction manual to operate.

b. The warranty period, users do not follow the instructions for correct operation, use, maintenance, maintenance or damage caused by unauthorized replaceable parts. It is within the scope of the warranty. But the company will still repair at a cost by the users themselves

c. Warranty period: one year warranty for mechanical parts; half a year for electrical parts.

9.3.2 Check the machine model and machine no.

After purchase, users please check the model and machine no with the invoice and warranty card. If unity, please contact us for correction.

9.3.3 Safe-keeping the invoice and warranty card

After purchase, users please keep the invoice and warranty card carefully. No alteration and no re-supply if loss. When repaired, please present invoice and warranty card.

<table>
<thead>
<tr>
<th>Customer’s company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Tel</td>
<td>Fax</td>
</tr>
<tr>
<td>Pc</td>
<td>Contacted person</td>
</tr>
<tr>
<td>Company name</td>
<td></td>
</tr>
<tr>
<td>Machine model</td>
<td>Machine No</td>
</tr>
<tr>
<td>purchase date</td>
<td>Invoice No</td>
</tr>
</tbody>
</table>

Note: warranty must be stamped by machine’s company.