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LM25T User Manual

Contents

Chapter 1: Safety Rules

1.1. Use correctly

The LM25T mechanism is exclusively compatible with Lamieux hot melt adhesive machines. Any installation or operation of non-Lamieux hot melt adhesive machines on this mechanism may cause severe damage to either the machine or the mechanism, for which Lamieux shall not be held liable for damages or compensation. All installation and usage must strictly comply with safety regulations to ensure long-term equipment reliability.

- Power supply: AC 220V/32A
- Pressure source: above 5 kg/cm2
- Place on a flat surface to prevent mechanical damage from improper wear.

Before use, manually verify all sensors, including optical protection, mold closing pneumatic cylinder, and Nozzle control pneumatic cylinder.

- Before formal production, conduct 5-10 blank tests to ensure the pre-polymer has fully melted.

DO NOT place any tools on the mold platform to prevent injury during mold operation

Optical protection prevents operators from accidentally entering the mold during closure. DO NOT reach in to adjust product placement when automatic production starts. Press the emergency stop button immediately if detected before making adjustments.

The LM2500W model features a horizontal glue injection system. When manually spraying, a shield shall be positioned in front of the nozzle to block and collect the glue.

1.2. Improper use

The LM25T features a user-friendly interface that simplifies operation settings, enabling operators to quickly master the system. All mold operations—including opening/closing, Glue Gun movement, and dispensing—may be controlled through the interface. The mold holder, designed to meet mechanical specifications, ensures rapid and precise operation. Improper operations and unauthorized modifications are strictly prohibited. Examples of improper usage are as follows:

Adjust the height of the Nozzle holder to accommodate the non-compliant mold specifications.

- Change the auto-launch button to a single-key launch
- Remove the optical protective gate by yourself
- Failure to work in accordance with safety regulations
- Operating in an environment with improper low-pressure molding conditions

For usage or maintenance issues, ensure that contact Lamieux's technical support team first.

1.3. Other Notes

The LM25T machine is designed for easy operation and proper safety measures. This manual provides detailed instructions on operating procedures and mechanical components. Note that the hot melt adhesive machine poses a scalding risk due to high temperatures. Operators should wear gloves when handling products to avoid burns from uncooled adhesive.

Chapter 2: Understanding the Equipment

2.1. Equipment Operation

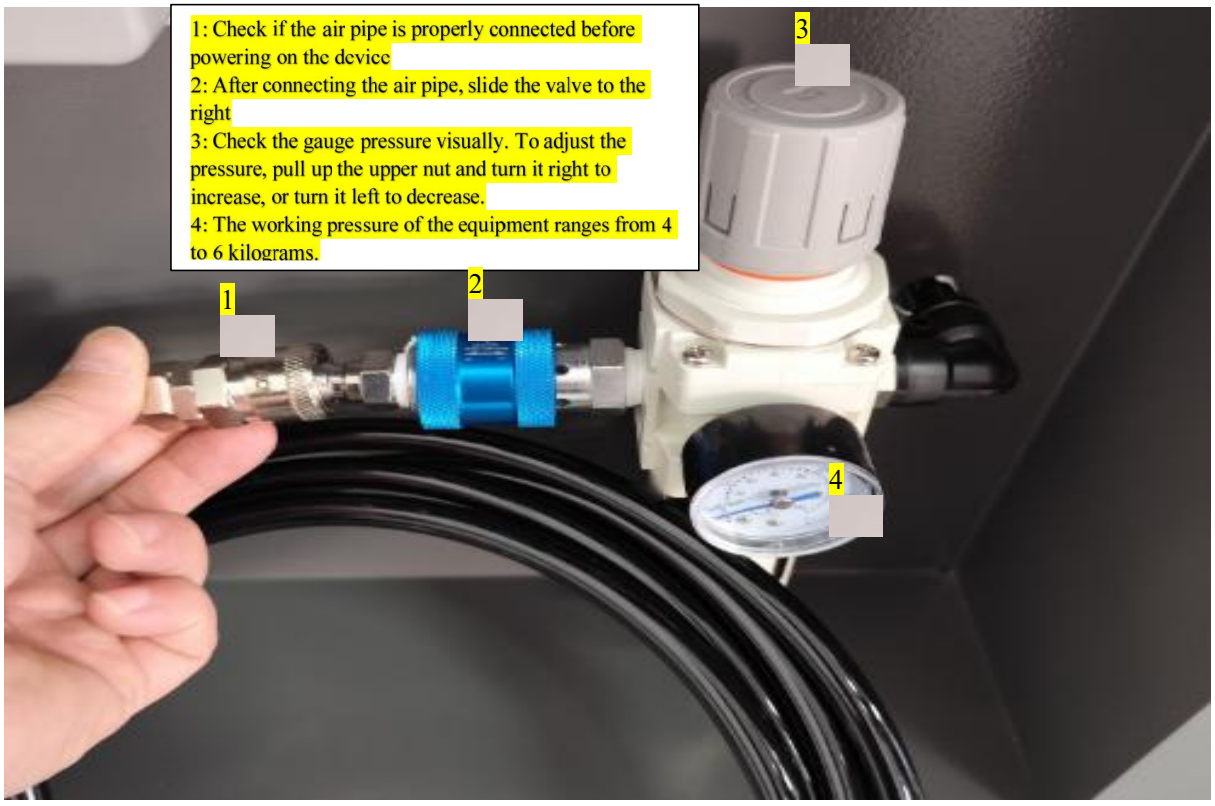
1. The main equipment consists of an operating platform and a melting system, which are connected via a wiring harness.

2. All equipment operations and debugging are performed via the ① control interface on the left side of the main unit. The mold is placed on the ② mold platform. During mass production, the ③ dual-throw start button at the front initiates automated production. In emergencies, the ④ emergency switch at the front can be pressed to pause the equipment. During automated production, the ⑤ back pressure controls the injection pressure to maintain pressure.

3. For the right hot melt adhesive cylinder, ensure there is sufficient material inside before starting the heating process.

2.2. Pressure source

1: Check if the air pipe is properly connected before powering on the device
2: After connecting the air pipe, slide the valve to the right
3: Check the gauge pressure visually. To adjust the pressure, pull up the upper nut and turn it right to increase, or turn it left to decrease.
4: The working pressure of the equipment ranges from 4 to 6 kilograms.



Chapter 3 Installation Instructions

3.1. Preparations before installation

The LM25T machine undergoes comprehensive functional testing prior to shipment and is carefully packaged for delivery. Upon receipt, ensure that remove the wooden packaging with care (never forcibly remove) and inspect for any impact damage during transit to ensure proper operation. For hose connections, use 114mm (9/16 inch) and 219mm (3/4 inch) open-end wrenches.

The machine should be placed on a stable surface to prevent unnecessary vibrations caused by the mold closing pneumatic cylinder. Additionally, avoid placing it in humid, dusty, or extreme temperature environments to prevent damage to electrical equipment and pipelines.

3.2. Electrical Connections

The left lower side of the machine is equipped with a 3m heavy-duty plug. Connect it to 220V voltage and 25A current to ensure the electronic device operates normally.

Connect the rubber cylinder to the machine by matching the male and female connectors of the wiring harness.

Chapter 4: Operation Instructions

After completing the installation and confirming that the hot melt machine's barrel, hose, and nozzle have reached the preset temperature (setting varies by model), perform a blank shot in automatic mode for 3-5 seconds to ensure full mold filling. Once verified, production can commence.
WARNING: If the product is not fully encapsulated (e.g., PCB with traces), avoid excessive vacuum firing duration to prevent adhesive flow.
The mold has a risk of scorching.

Select the user to log in here: User 1---for producers, who cannot change production parameters (default password: 12345). User 2--for administrators, who can modify any parameters (default password: 54321). Both users require different passwords.
To change the password, select Admin, enter the password, and click the upper corner space to proceed. (Note: After changing the password, you must remember it; otherwise, contact the original manufacturer to update the program.)

To return to the login page, click the blank area in the top-left corner of the homepage.

Figure 2: Main operations of the human-machine interface: Home, Manual, Temperature, I/O, Automatic, and Parameter page

4.1. Manual mode

Manual mode is mainly used to set up the mould and adjust the machine to automatic production. The main functions are to control the "Mold open", "Mold close", "Nozzle Forward", "Inject","Light" "Eject","Boost""Motor ready", "Calibration", "slide to left", "Turntable start".

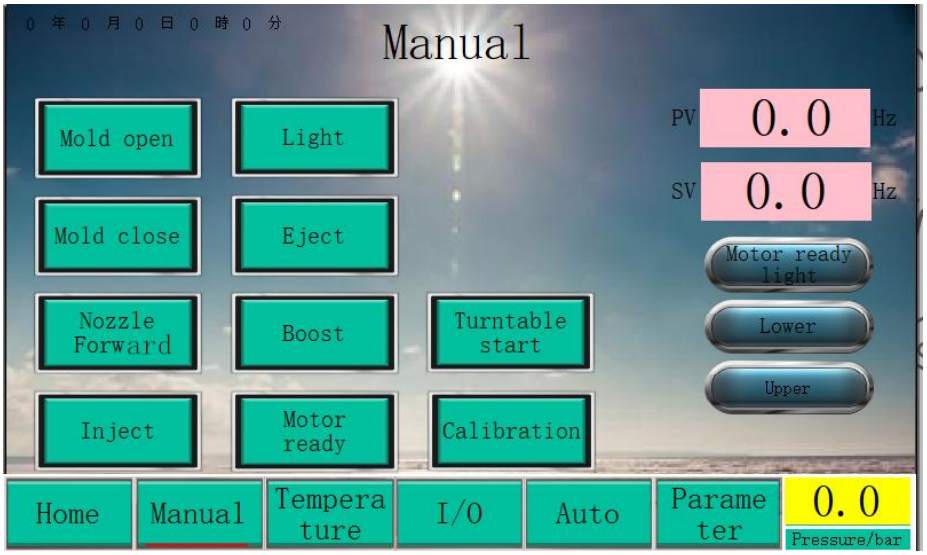


Figure 2: Manual Mode

Short press the Open Mold button Mold open to jog the upper die move upward, the long press Mold open will make the upper die move to the top, the short press Mold close will make the upper die move downward, Long press Mold close the Close Mold button to drive the upper mold to the fully closed position.

Nozzle Holder Advance: Press Nozzle Forward to move the Nozzle holder forward, and the Glue Gun tip should be inserted into the glue hole; press Nozzle Forward again Move the Nozzle holder back to the automatic mode preparation position.

Manual glue release: Adjust the glue output by pressing the button Inject Continuous pressing Inject maintains the flow. The motor will only activate when the ready indicator lights up Motor ready light ; otherwise, it remains inactive. (WARNING: To spray glue, press Motor ready the ready button simultaneously.)

WARNING: If pressed Inject when the mold is not closed, the adhesive may not have cooled completely. Wear protective gear.Wear thermal insulation gloves

Mold ejection: Pressing Eject the inner ejector pin will push it upward continuously, and pressing it Eject again will return it to its original position.
Set frequency: Set motor speed. Real-time frequency: Display real-time motor speed (unit: Hz).

The motor's maximum setting is 50Hz.

When installing molds or manually handling products in single-mode, we can manually rotate Turntable start the turntable 180°.

After the mold is installed, hold the mold closed Calibration for two seconds to let the electronic limit scale record the mold height.

4.2 Temperature Control Mode

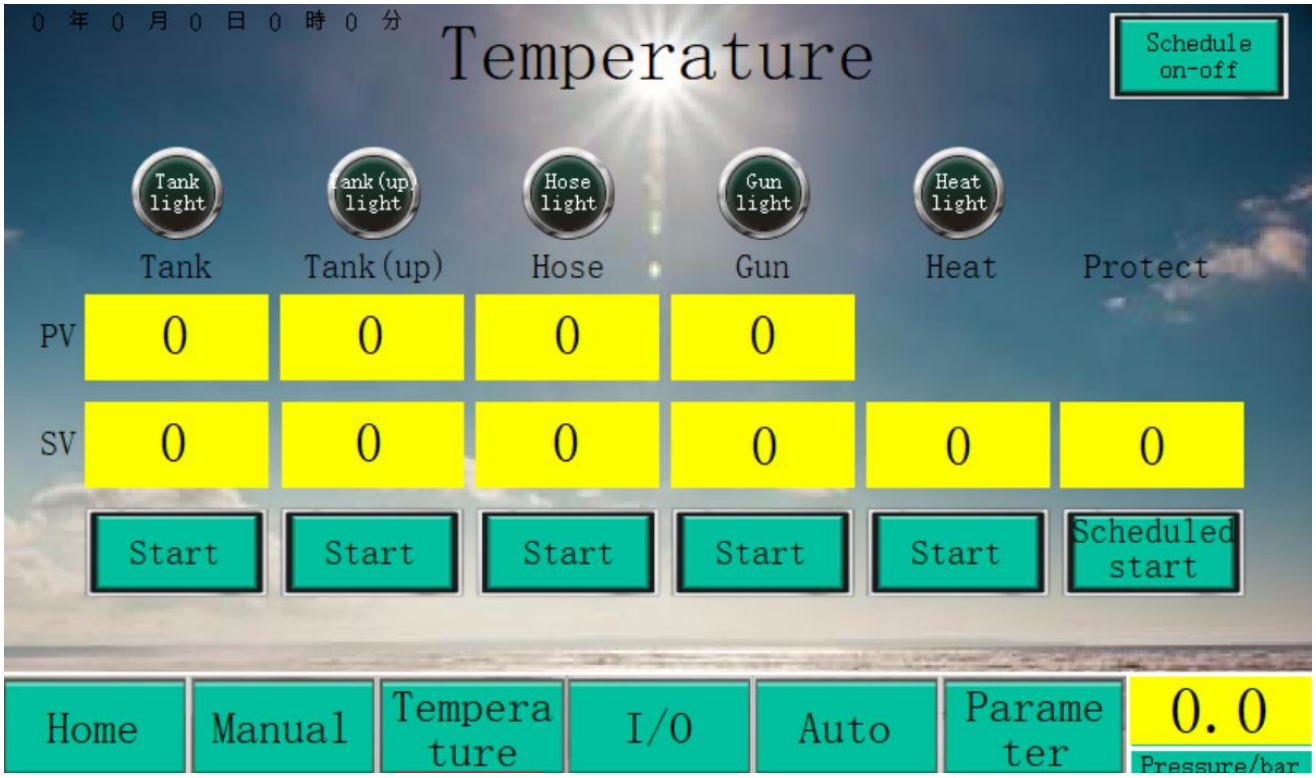


Figure 3: Temperature Control Mode

4.2.1 As shown in the figure, manual activation of the four heating channels is required for each startup cycle, corresponding to barrel heating, upper heating, hose heating, and nozzle heating. (Insulation temperature range: 0°C to 250°C) After activating all four heating channels, wait until the real-time temperature reaches the set point. The motor readiness indicator will illuminate before the injection molding function can commence.

4.2.2 After activating the thermal insulation function, all temperatures will be maintained at the preset range (120°C to 250°C).

4.2.3 The motor protection program requires a minimum protection temperature of 130°C; below this threshold, the motor will fail to start.

4.3: I/O page

4.3.1 This page displays the control function table of PLC input/output points, indicating whether signals are output or input during equipment operation.

4.4. Automatic Mode

Before entering automatic mode, configure the parameters first. To activate automatic mode, press both start buttons 

simultaneously. If the product is misaligned or adhesive leaks from the mold, immediately press the button  . The screen will display as below: Rotate clockwise  , Reset, and the device will reset to automatic standby mode. After cleaning, press 

both buttons again to resume production.

Figure 5: Automatic Mode Screen

Current output: A count-based unit. Each shot adds 1 to the model quantity. Pressing Reset resets the number to zero.

Cumulative output: a unit of count, representing the total quantity of each injection from the start to the end of production.

Press Reset to reset the number.

Set production: Press the number box to set the production target. The target will be displayed when completed.

Maximum set to 100,000,000

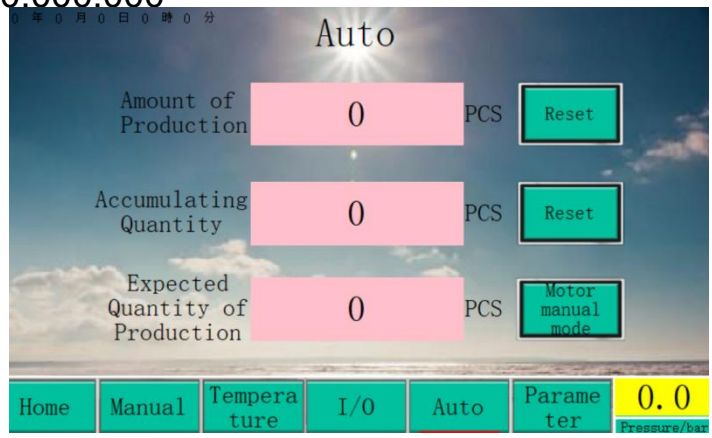


Figure 6: Production Completion Screen

If your hand or tool accidentally approaches the safety grating during automatic mold closing, the optical protection gate will activate and halt all operations. If the following screen appears, check for any foreign objects blocking the optical protection range. After inspection, press the button Reset to resume automatic mode.

Figure 7: Safety photoelectric action screen

4.4. Parameter Settings

The low pressure injection molding parameters are set in seconds, not in metric units. The injection molding parameters of each product are different, and there is no standard value. Therefore, the user should do sample test before the formal mass production.

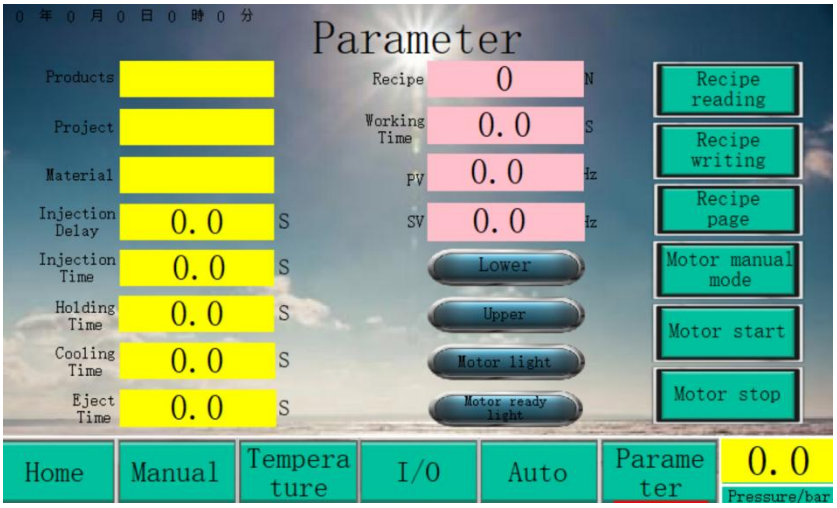


Figure 8: Parameter Settings Screen

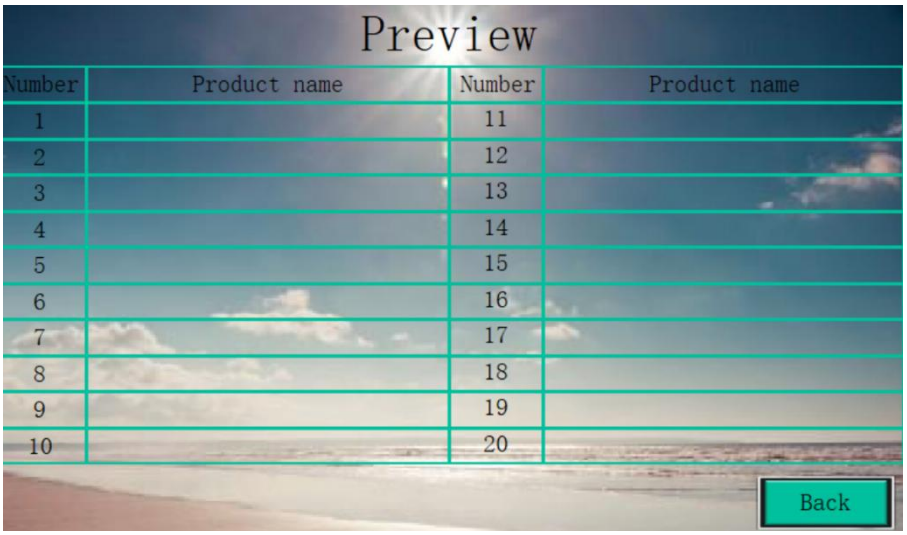


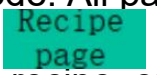
Figure 9: Recipe Settings Screen

4.4.1 After all parameters are set, the mold opening upper limit indicator 

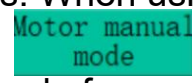
and motor ready light 

will illuminate. Press the start button with both hands to begin production.

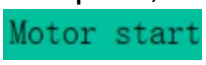
4.4.2 To adjust machine parameters, the recipe box shall be set to 0 

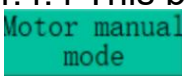
. Recipes are numbered 1 through 10. For example, setting 0 activates the machine adjustment mode: All parameters are precon figured. You can then input recipe parameters 

into the recipe settings page for future reference. To activate a recipe, enter any number (1-10) in the recipe number field to retrieve and transfer the current recipe parameters to the production settings. When using the same recipe again, simply enter its number.

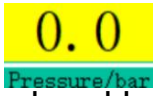
4.4.3 

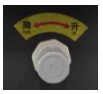
This is the manual mode for the motor, requiring manual activation before production. If this button is set to automatic start-stop mode, the motor will start automatically when the equipment closes the mold and stop after injection molding is complete, without manual activation.

4.4.4 This button 

is for manual motor operation when the 

manual mode indicator is off. If the indicator is on, manual operation is unnecessary.

4.4.5 The 

pressure value of unglued here is set by rotating the 
knob forward and backward. In principle, it will not exceed 6.0 bar. Generally, 0.1-3.0bar is recommended, depending on the product.

Chapter 5: Troubleshooting

When any fault occurs, the fault status will be displayed on the human-machine interface. The user should troubleshoot according to the inspection items shown on the screen, and most faults may be resolved.
WARNING: This task requires qualified personnel with equipment maintenance expertise to perform inspection and troubleshooting. Avoid disassembly or part replacement during operation.
This causes damage to the machine.

5.1. Fault Details

- Mold lower limit timeout alarm: The lower limit sensor may not have been recalibrated after mold replacement  . Check if the sensor light is on. If not, adjust the position and press reset Reset to resume production.

Figure 9: Mold Cylinder Failure

WARNING: This limit alarm may be ignored for versions using electronic limit scales.

Abnormal Safety Light Curtain: Check if there is any foreign object blocking the Safety Light Curtain, then press reset. The grating only works in the automatic mode when the mold is closed.

Figure 10: Safety photoelectric operation

Cylinder malfunction in Glue Gun: Check if the nozzle sensor light is on. Adjust the sensor position until the light turns on, then press reset.

Figure 11: Cylinder Failure of Glue Gun

●Emergency Stop Button: If the following screen appears, rotate the emergency stop button counterclockwise and press reset.

Figure 12: Emergency Stop Failure

●Side door open: If the following screen appears, check if the side door is open. Close it before pressing reset.

Appendix 1: Mold Installation

approval	examine	proposed	operation instruction	Version: A03 Archive number: Effective date of this version: 2024.12.06 Page: 1
Yang Hongliang	Qiu Shuping	Liang Zhihai	LM25T frame program **Revision history**	

sequence of operation：

1. Enter the main human-machine interface and select the manual option.

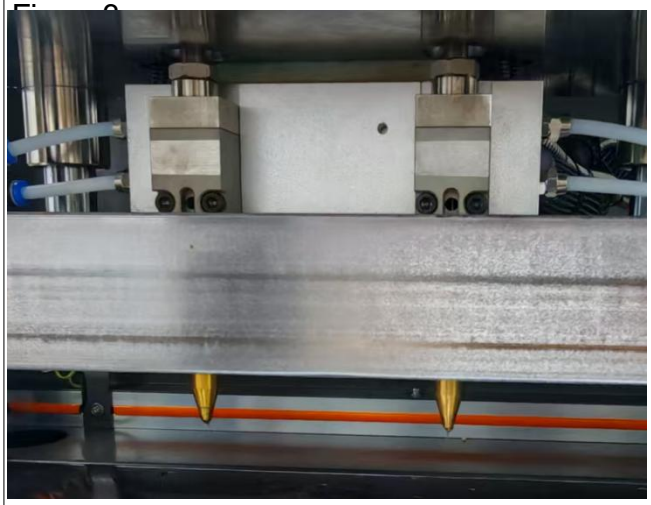
2. Advance the manual screen to select Gun holder advance., ensuring the adhesive gun maintains a downward thrusting position (Figure 3).

3. Position the mold assembly beneath the gun holder, visually aligning the injection port with the upper gun valve.

sketch map：

Figure 1

Figure 2



approval	examine	proposed	operation instruction	Version: A03 Archive number: Effective date of this version: 2024.12.06 Page: 2
Yang Hongliang	Qiu Shuping	Liang Zhihai	LM25T frame program **Revision history**	

sequence of operation：

4. Slowly press the mold closing button to guide the upper die nozzle into the injection port and align it, then secure the mold and use the dedicated clamping module to fix both dies.

double-

5. After securing the first lower die, click to open the mold and raise the upper die to its maximum position. Then click the rotary table to start the process. Place the second lower die on the opposite side of the rotary table, and slowly engage the mold by aligning the upper die guide post with the lower die guide hole (Figure 6). Finally, secure the second lower die with the pressing module.

Note: No second lower die is required when using single-mode injection molding.

sketch map：

Figure 4

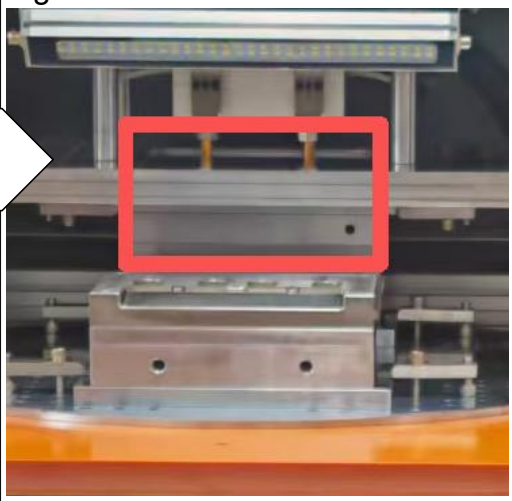


Figure 5

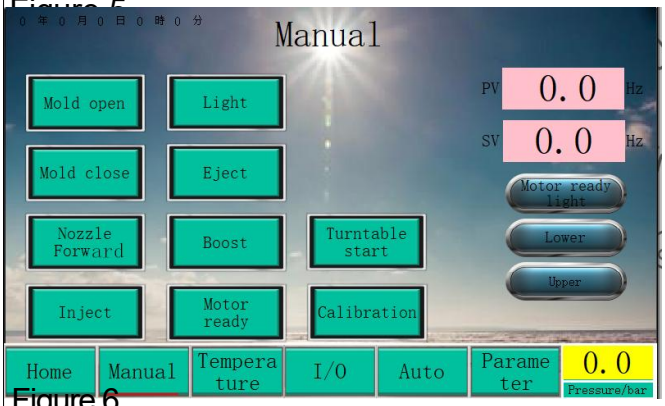
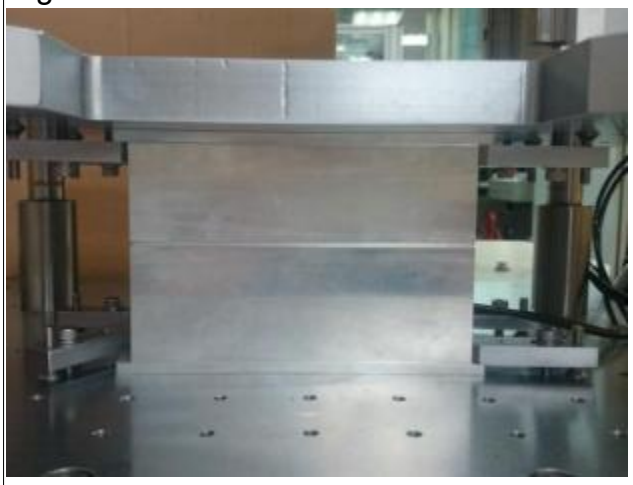


Figure 6



approval	examine	proposed	operation instruction	Version: A03 Archive number: Effective date of this version: 2024.12.10 Page: 3
Yang Hongliang	Qiu Shuping	Liang Zhihai	LM25T frame program **Revision history**	

sequence of operation：

6. After aligning the upper and lower dies, press and hold Clamping calibration for two seconds. The electronic limit gauge will then record the closed mold distance, completing the mold setup.

sketch map：

Figure 7

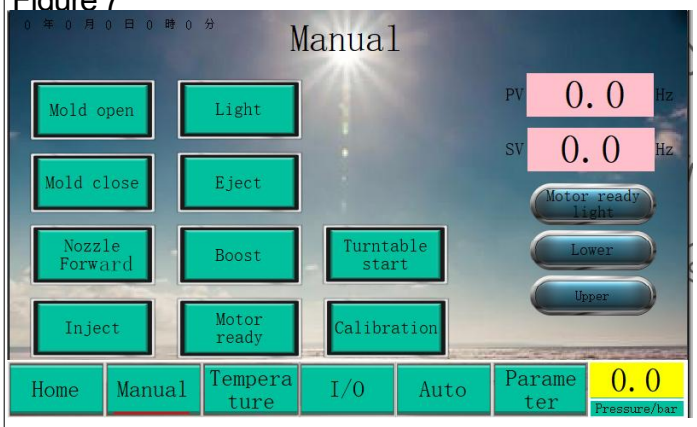


Figure 14

Chapter 6: Dismantling and Installation

6.0 Preface

This chapter outlines the maintenance procedures for 2000-series hot melt adhesive machines, designed to ensure optimal performance through daily, weekly, monthly, semi-annual, or scheduled maintenance based on usage frequency and mechanical efficiency. The scheduled maintenance protocol covers all operational scenarios, including environmental variations and operational conditions, regardless of machine usage frequency. Proactive preventive measures and regular maintenance help maintain peak performance and extend the machine's service life.

6.1 Daily Maintenance Tasks

1) Keep the surface of the hot melt adhesive machine and its surrounding work area clean at all times.

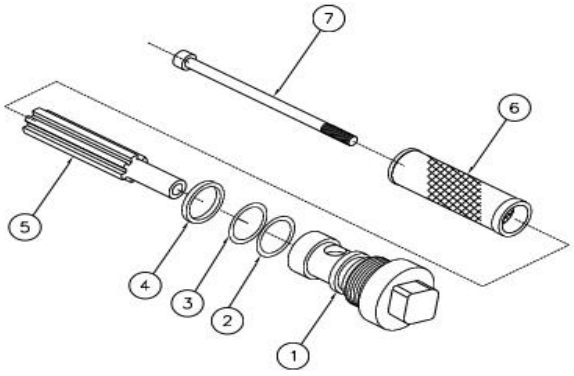
2) When loading hot melt adhesive materials, it's best to first inspect the materials for foreign objects, as these may cause blockages or interruptions in the adhesive flow, leading to clogging of the filter needle valve or Manifold. After adding the hot melt adhesive materials, promptly cover the barrel to prevent external substances from entering the adhesive.

3) Check the pressure regulator filter cup for water accumulation and drain it promptly if present.

4) Regularly clean the Nozzle Assembly surface to prevent carbon deposits from heat-melt adhesive, which could cause overheating or operational instability.

6.2 Monthly Maintenance Tasks

Disassemble and clean the parts prone to clogging in the glue dispensing system, with special attention to the maintenance of the main unit's filter



assembly. The following details the maintenance procedures for the filter assembly.

Clean the filter assembly monthly until the operator determines it can reduce cleaning frequency based on operational experience. The following are detailed cleaning steps:

1) Before removing the filter assembly, the hot melt adhesive machine shall be preheated to the operating temperature.

2) When the Hot Melt Adhesive Machine reaches the operating temperature, start the Nozzle Assembly until the residual pressure in the glue discharge system is completely released.

3) Turn off the motor, remove the needle valve assembly with a hex wrench, and take out the nozzle filter assembly.

4) Adjust the gear pump pressure to ensure the hot melt adhesive is pumped out steadily until it is completely dry and free of impurities, then shut off the motor.

5) Use a wrench to remove the filter assembly and pull it out vertically from the Manifold.

6) To disassemble this filter assembly, first remove screw ⑦. Then, follow the sequence to detach filter ⑥ and support tube ⑤, and finally slide out the self-filter rod ①, back support ring ④, and O-rings ② and ③.

7) Inspect all fully disassembled components for damage. If any parts are damaged or require replacement (particularly the filter assembly O-ring), refer to Chapter 8's disassembly diagrams and replace them with the correct part numbers.

8) If no components are damaged, immerse all components in a cleaning solvent for thorough cleaning. For certain components, use a hot air gun or flameless heater to facilitate cleaning. The filter screen may be cleaned with a brush (but never a metal one). After cleaning, dry the components thoroughly with a clean cloth.

9) Reassemble the cleaned components and reattach the filter assembly to the Manifold using a adjustable wrench.

Lock the filter group properly. Never overexert force to avoid damaging the O-ring or causing thread slippage.

WARNING: Ensure the Manifold is below the specified operating temperature to reinstall the filter assembly, otherwise residual cold adhesive may damage the filter.

10) Start the gear pump and adjust the system pressure to the operating pressure. Pump the hot melt adhesive steadily until it is completely dry and free of impurities. Then shut off the motor and connect the heat-insulating tube, adhesive guide tube, and joint assembly.

6.3 Regular Maintenance Requirements

WARNING: Always wear safety gloves, goggles, and long-sleeved workwear to prevent burns from scalding hot liquid adhesive or overheated component surfaces. Before loosening or locking pressure connectors (e.g., disconnecting nozzle assemblies from Heated Hoses/gel tubes or removing filter assemblies from Manifolds), ensure proper pressure release to avoid hazards.

General maintenance

1) Filter of three-point combination of cleaning control pressure.

2) Clean the interior of the power control box. During cleaning, ensure no wire connections are loosened to prevent short circuits.

3) Check if the wire end connections are secure.

WARNING: Repeated heating and cooling may loosen wire connections, potentially causing short circuits.

4) Check for any glue leakage around the joint between the glue tube and the nozzle.

5) Inspect the adhesive tube's connection with the manifold for any leakage. If leakage is detected, loosen the connection with a wrench, check the O-ring for damage, clean it, or replace it if necessary.

6.3.2 Cleaning the adhesive removal system

The hydraulic system of this series shall be checked and cleaned regularly to remove the foreign matter or the carbide formed by the hot melt glue at high temperature. The cleaning steps can also be used to replace the hot melt glue when the new hot melt glue is incompatible with the old one in the Adhesive Tank.

WARNING: Some cleaning solvents incompatible with hot melt adhesive may form paste-like or gel-like substances when mixed, potentially exacerbating existing issues (e.g., clogging) and making them harder to resolve. Therefore, before using a cleaning solvent, it is advisable to first mix a small amount with the hot melt adhesive sample to be cleaned and assess the results before applying it.

1) Heat the hot melt adhesive machine to the operating temperature, activate the Nozzle Assembly, and completely release the residual pressure in the Heated Hose, Heated Hose, and Nozzle Assembly.

2) Place the container below the connection of the adhesive tube and the Manifold and the Nozzle Assembly.

3) Remove the nozzle with a wrench, then start the gear pump to extrude the hot melt adhesive through the Nozzle Assembly.

4) After the hot melt adhesive inside the system is completely cleaned and dried, turn off the gear pump.

5) When loading new hot melt adhesive into the melting tank, ensure it is free of foreign matter.

6) When the system temperature is operational, start the gear pump, adjust the system pressure to the required level, and pump the hot melt adhesive from the melting tank to the respective devices before it flows into the collection container at the bottom.

7) Turn off the gear pump.

WARNING: The optimal internal cleaning method for the adhesive system involves the circulation of molten hot adhesive from the storage tank through the gear pump, then through the Manifold filter, into the Heated Hose, and finally back to the storage tank. This process takes approximately 15 minutes.

8) Refer to Section 5.2 for disassembling the filter assembly and cleaning it thoroughly.

9) Disconnect the external power supply, then reinstall the Heated Hose and Nozzle Assembly's connectors and power plugs.

10) Reconnect the external power supply to restore the system to operational status.

6.3.3 Cleaning the Nozzle Assembly

When the filter assembly becomes clogged or damaged by foreign objects, or when carbon deposits form from the hot melt adhesive in the Heated Hose and Nozzle Assembly, the nozzle may become blocked. Carbon deposits primarily form when the hot melt adhesive is heated beyond its specified temperature. In such cases, the Heated Hose and Nozzle Assembly may need to be replaced.

1) Heat the Nozzle Assembly to the specified operating temperature.

2) Adjust the pressure of the gear pump in the power system to zero.

3) Adjust the starting pressure of the Nozzle Assembly to the operating pressure, then activate the Nozzle Assembly to eliminate residual internal pressure.

4) Set the Nozzle Assembly pressure to zero, then remove the Nozzle Assembly from the heat preservation pipe.

5) The Nozzle Assembly is divided into heating section and glue spraying section. Remove the filter device from the Nozzle Assembly, check whether the filter is damaged, and replace it if necessary. If the nozzle is blocked by foreign matter, soak it in a cleaning solvent, clean it with a soft brush, and dry it with a clean cloth.

6) Use a wrench to remove the nut from the glue application section of the Nozzle Assembly. Then, extract the nozzle from the nut.

7) Use a slender needle to pierce the fine hole of the hot melt glue flow on the nozzle in the opposite direction, to remove the foreign matter or carbide that is blocked.

WARNING: Never use a sharp drill bit to remove the nozzle hole, as this may damage the nozzle and cause uneven hot melt adhesive flow.

When cleaning the nozzle of a hot melt adhesive machine, follow these methods:

(1) Heat with a smokeless hot air gun, then wipe clean with a cloth.

(2) The nozzle should be soaked in a cleaning solvent, and ultrasonic cleaning should be used if possible.

(3) Soak the nozzle in an appropriate amount of chemical solvent.

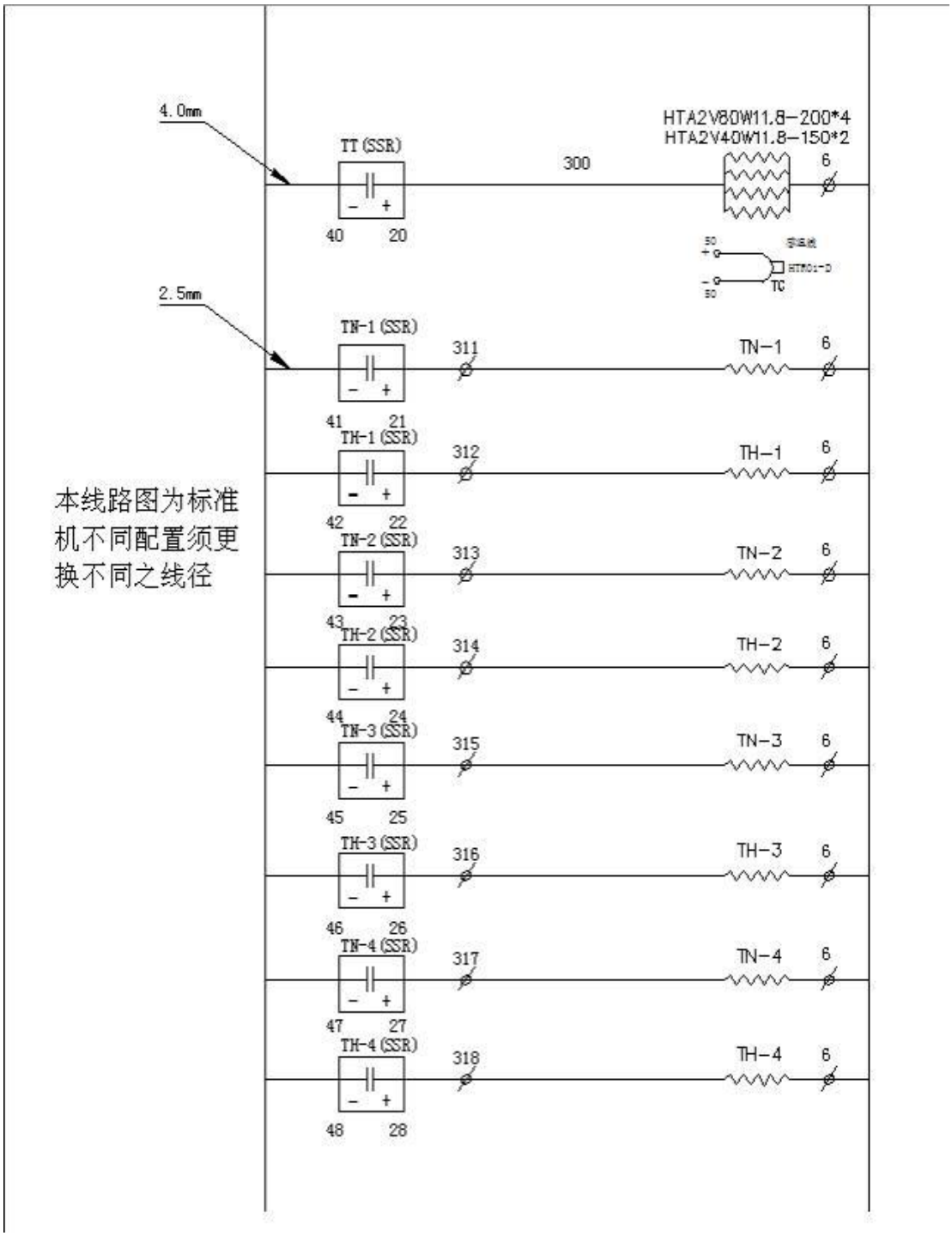
(4) Reassemble the nozzle on the Nozzle Assembly and recombine the heating and glue spraying parts. Before reassembly, the filter device shall be installed first.

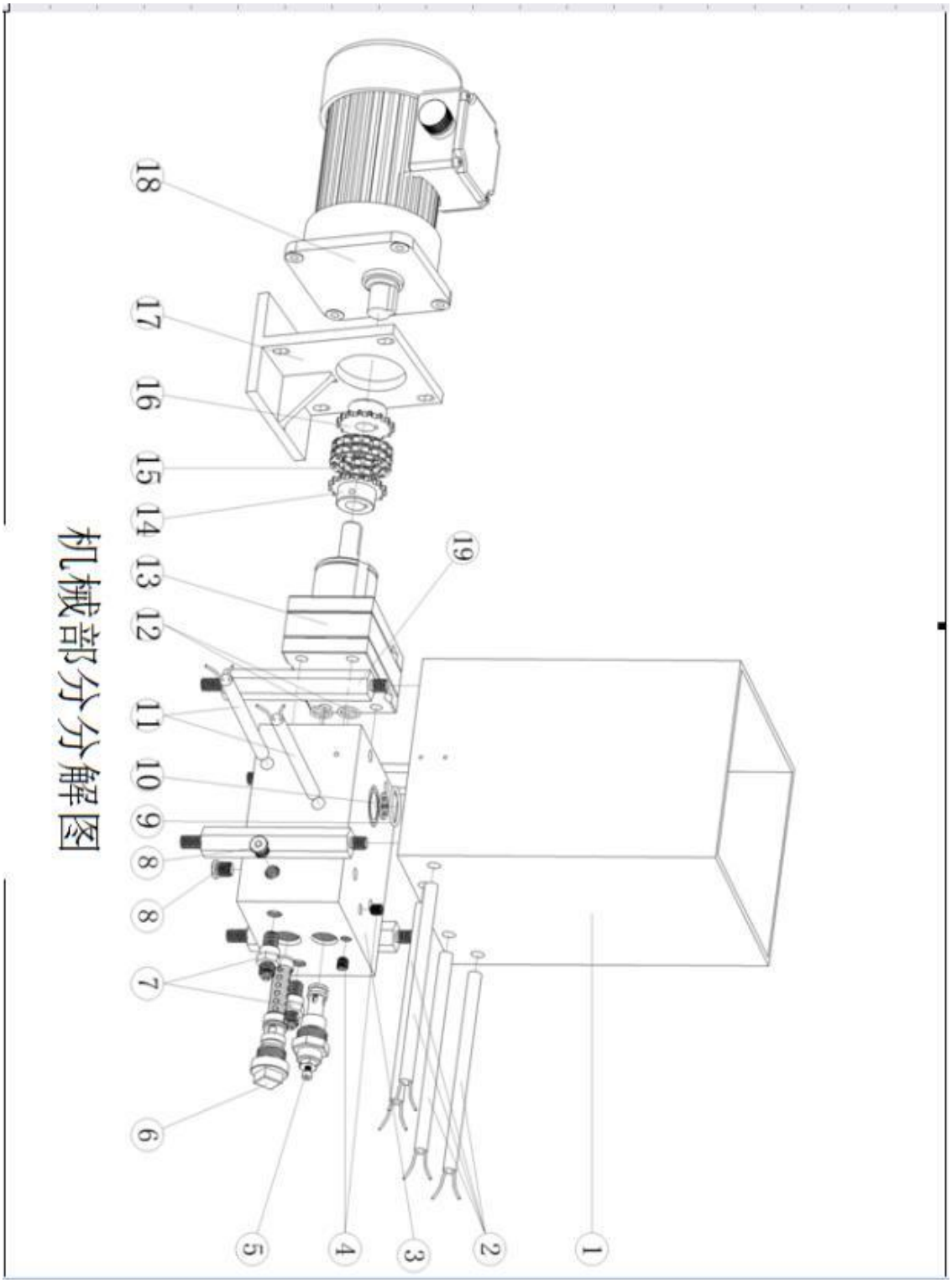
(5) After assembling the nozzle, connect the Heated Hose.

(6) After powering on the hot melt adhesive machine and meeting all operational requirements, the machine is ready for reuse.

Chapter 7: Schematic Diagram of the Glue Machine Structure

7.3 7.2




机械部分分解图
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4
3
2
1

7.4 List of parts

No.	Part No.	Part Name	Qty	Remarks
1	910C00	Return Valve Group	1	
2	1004P2C00	Primary Filter Assembly	1	
3	915B10	Manifold Special Connector	2	
4	OP30×3.1	O-Ring	1	
5	OP16×2.4	O-Ring	2	
6	OP16×2.4	O-Ring	2	
7	FB-9	Gear Pump	1	
8	YTI 280	Gun Valve Assembly	1	
9	INT20	Brass Nozzle	1	
10	Pipe12	Hose, 1.2 m	1	

Chapter 8: PLC Circuit Diagram