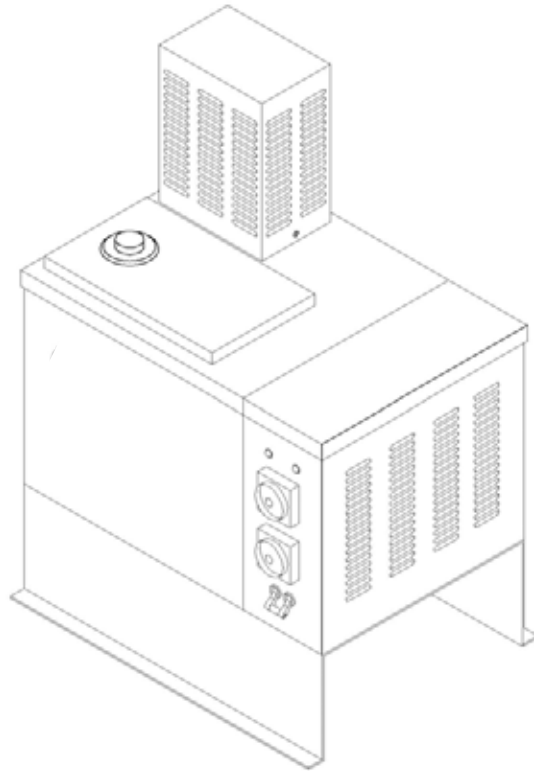


EconoMelt™/G07E05-001

MANUAL



Hot Melt System / 120 V

Glue Machinery Corporation™

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Chapter 1. Safety Instructions

1.0 Introduction

This chapter is intended as an introduction to the installation, operation and maintenance of the G07E05-001 / ECONOMELT and sets out the safety rules to be observed for preventing risk both to personnel and to the equipment.

1.1 Installation Safety

1. Establish a proper ground connection for the entire machine (before installation).
Without a proper grounding connection, every element of the machine becomes a potential conductor and poses a risk of electrical shock.
2. Check that the power cords and their insulation are correctly dimensioned/insulated for the load constituted by the machine - including all accessories.
3. Ensure that electronic power is consistent with the required electronic power of the hot melt applicator and check that the power cord is correctly connected with a breaker.
4. Always operate the machine in accordance with the recommended current and voltage to avoid a fire hazard. When installing the hose try to avoid twisting the hose and keep away from moving machinery.

1.2 Operation Safety

1. Do not operate the equipment near volatile or explosive gases or materials.
2. Do not operate the equipment without the covers, panels, or safety guards not properly installed.
3. Do not operate the equipment at a temperature over 50°C or below 0°C (122°F/32°F).
4. Keep the hose away from the ground or cold surfaces. If any part of the hose is cooled, this will cause hot melt to flow slowly or not at all.
5. Do not use the equipment as a ladder or stepping stool.
6. Only the base of the hot melt applicator can be used while moving or lifting the machine.
Do not use outstretched parts or components on control panel as supporting parts for lifting.

Note: The hose length for this machine cannot exceed 2.4 meters.

1.3 Maintenance Safety

The following major precautions should be taken in the maintenance of this hot melt applicator:

1. Cut off the main power before maintenance.
2. Do not wear rings, watch, necklace, bracelets or any other conductive decorations while servicing the machine.
3. Do not dismantle, check, or adjust any part of the machine without personnel assistance.
4. Only qualified staff should perform maintenance.
5. Do not touch any exposed electric cord terminal or loose components.
6. Power supply must be turned off before dismantling and removing of protective devices on the machine. Power must also be turned off before the replacement of electric components.
7. If possible, try to stand on a plastic carpet during maintenance work. Never service this unit on a wet floor or in an extremely humid environment.
8. Always wear safety gloves, safety glasses, and a long-sleeved uniform to prevent your body from being burned by the hot melt applicator or hot component surface.
9. In order to prevent the inner surface of the tank from being scratched, do not use flammable or sharp tools during tank cleaning.
10. Never operate the machine if compressed air or hot melt leaks from the unit.

1.4 Using Hot Melt and Solvent

Hot Melt

The following items should be noted when using hot melt.

- Hot melt can instantly be cooled down from liquid into solid. Although the outer surface is solid, the inner part may remain hot. If hot melt touches skin, it will/can cause severe injury.
- Be sure to wear a safety uniform, safety gloves, and protective glasses before filling adhesive into the tank or when working close to the machine.

Heating solvent or cleaner

- Never heat parts with open flames or a fixed-temp. heating apparatus while cleaning parts with heated cleaner.
- Due to flammability and poisonous gas exposure risks, solvents of high unpredictability cannot be used to clean glued components.
- Before using the cleaner, make sure the room is well ventilated.
- To avoid taking in too much poisonous gas caused by high temperature, do not work long hours when working with cleaners.

**Major applicable cleaning solvents:
Safety When Using Adhesive and Solvent**

Adhesive

1. Use extreme care when working with molten materials as they solidify rapidly and present a hazard. Severe burns can occur if the molten materials first solidify; they are still hot.
2. Always wear protective clothing and eye protection when handling molten materials or working near equipment containing hot melt adhesive under pressure.

Cleaning Solvents

<p><i>WARNING</i></p> <p>DO NOT USE ANY HALOGENATED HYDROCARBON CLEANING SOLVENTS. The chemical reaction between aluminum or galvanized parts and halogenated hydrocarbon cleaning solvents is unpredictable and may result in anything from corrosion to a dangerous explosion. Contact your supplier to make sure you are not using this type of solvent for cleaning and flushing. The common halogenated hydrocarbon solvents are listed below.</p>
<p>DO NOT USE</p> <ul style="list-style-type: none"> Carbon tetrachloride Chloroform Dichloroflouromethane Dichloromethane Ethylene dibromide Ethylene dichloride Ethyl iodine Methyl bromide Methylene chloride Methylene chloridebromide Methyl iodide Monochlorobenzine Monochlorotoluene N-butly iodide Orthodichloronenzine Perchloroethylene Propyl iodide Trichloroethylene Trichlorfluoromethane 1,1,1-trichloroethane

<i>WARNING</i>
An extreme fire hazard exists when heating solvents in a heating device that is not thermostatically controlled. When heating a solvent always use a controlled heat source.
<i>WARNING</i>
Hot-melt adhesives are a burn hazard both in the molten state and when they are solidified and still hot. Be sure that first-aid information and supplies are always available where hot-melt adhesives systems are operating.

C. Purging of System

- Pump all adhesive from system
- Turn off system power and disconnect air from the system
- Remove the filter in the tank and reinstall filter cover
- Fill system with recommended purge material (Caution- purge material may be much thinner than hot melt and may spray from system with high velocity and splash)
- Turn system on and re-pressurize
- Heat purge material and pressurize pump at very low pressure
- Extrude purge material from gun into proper receptacle or re-circulate back into tank.
- Purge all material from tank and hose
- Turn off system and depressurize
- Install a new tank filter
- Fill tank with hot melt to the 80% full level
- Melt adhesive and purge one full tank of adhesive through hose and gun

IF MOLTEN MATERIAL COMES IN CONTACT WITH THE SKIN:

- **Do not try to remove molten material from the skin.**
- **Immediately immerse the affected area in cold, clean water. Keep the affected area immersed until the material has cooled.**
- **Do not try to remove the cooled material from the skin.**
- **Cover the affected area with a clean, wet compress.**
- **In case of severe burns, look for signs of shock. If shock is suspected, have the patient lie down, use blankets to preserve body heat and elevate the feet several inches.**

Call a physician immediately.

Chapter 2 - Equipment

2.0 Introduction

This chapter contains general information on the G07E05-001 / ECONOMELT 120V



2.1 Specification:

Item G07E05-001 / ECONOMELT 120V

Tank Capacity	10 lbs.
Melting Rate	10-15 lbs/hr
Power Supply	120V
Power (W)	2000 (Tank)
Size (L, W, H)	16", 15", 23"
Weight	84 lbs.
Air Pressure	7-57 PSI
Max. Viscosity	12,000 CPS
Max. Working Temp.	220°C (428°F)

Note: Specifications subject to change without notice.

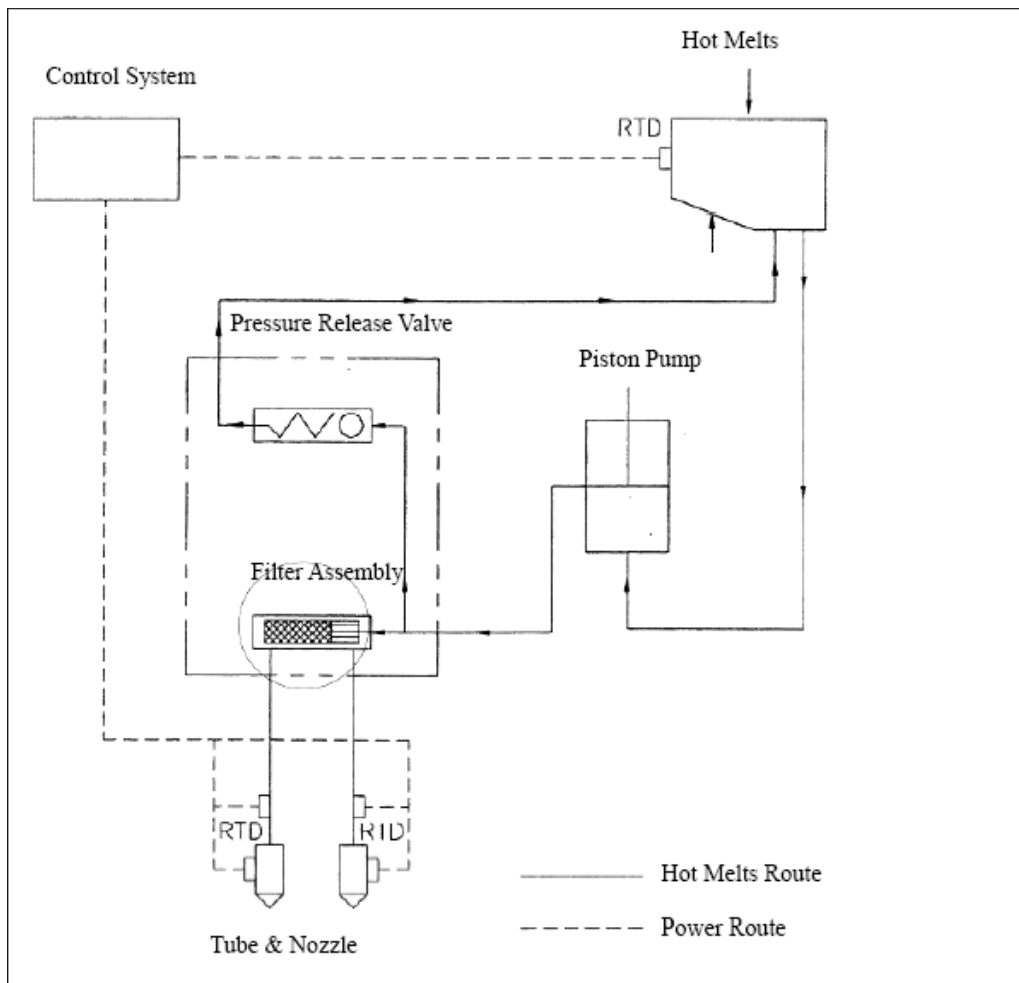


Fig2.2 Brief Work Flow & Electric Control System

2.2 Mechanical Characteristics

The G07E05-001 / ECONOMELT is designed to melt hot melts in most bulk forms such as chips, flyers and 2.5 lb. bricks .The system processes hot melts with viscosities from 500cps to 12,000 cps. A pneumatic cylinder pump is used in this machine.

The G07E05-001 / ECONOMELT consists of an electrical system, pneumatic system and hydraulic system. The melt tank is insulated to reduce heat transferred through the surface of the machine but some surfaces are hot and operators must exercise caution.

Solid adhesive in the tank is melting into liquid which flows to the bottom of the tank and into the dual-action piston pump. When the piston pump cycles, hot melt flows into the cylinder pump and is pressurized into the manifold through the filter assembly, through the flexible heated hose and into the handgun.

2.3 Function of the Equipment.

2.3.1 Drive System

Adhesive pressure is achieved with a pneumatic piston driving a hydraulic pump. As shown in fig. 2.2 the cylinder is connected to the pneumatic pump. The cylinder's piston moves upward and downward, which drives the pump, pulling hot melt from the tank and pressurizing it into the hose manifold. The cylinder's action is controlled by a solenoid valve and limit switch.

2.3.2 Hydraulic System

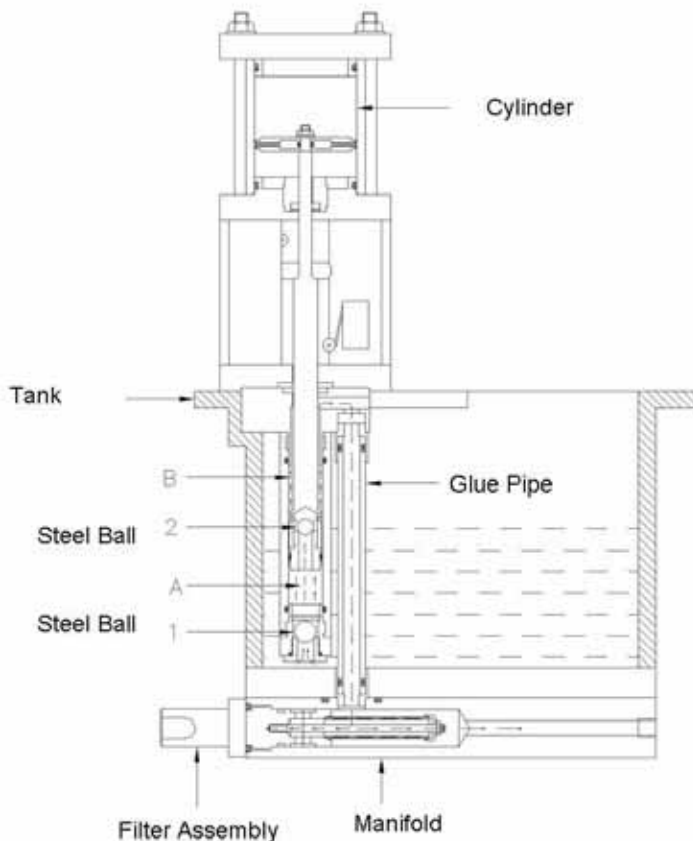


Fig2.3 Hydraulic System

2.3.2 Hydraulic System

1. Melt Tank

Hot melt is placed in the melting tank, the heaters in the bottom of the tank heat the tank and the adhesive becomes molten. Molten adhesive flows to the pumping system. On the internal wall of the tank there is a coated layer of Teflon material which reduces hot melt adherence to the wall of the tank. Fins inside the tank increase the heat conductivity and melt rate. An RTD sensor is built in the tank to detect the tank temperature and sends relevant signals to the temperature controller. This effectively controls the tank temperature.

2. Cylinder Pump

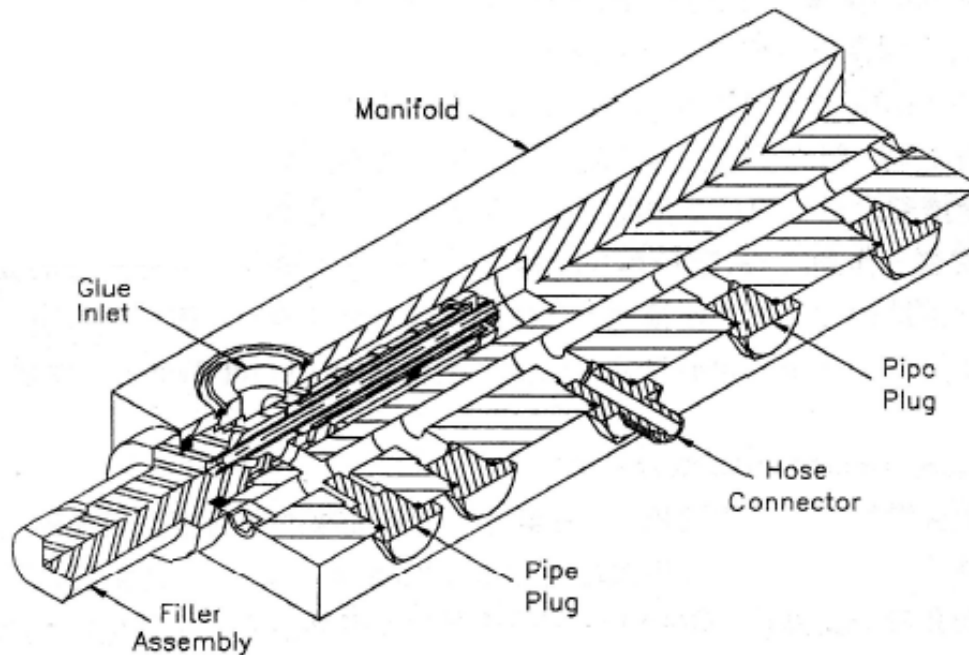
In the G07E05-001 / ECONOMELT the piston pump can be divided into two sections, i.e. pneumatic drive system (Drive System) and the hydraulic system (the Dual-Action Piston Pump) which is installed inside the tank). As the Fig 7.4 shows, adhesive is pumped when cycling both up and down. The combination of the Lower Check Valve (at top of the cylinder) and the Upper Check Valve (inside the piston) makes continuous glue pumping possible. When the piston strokes upward- Section A draws adhesive in and adhesive in Section B is driven out to the manifold. These actions are controlled by the limit switch located on two sides of the cylinder base. Back pressure is created on each stroke with a series of check valves.

3. Filter Assembly

The filter is installed inside the manifold. Hot melt that is pressurized out of the piston pump is filtered here and then dispatched to different channels inside the manifold. This device filters impurities and char prior to the flexible hose. It is fixed in the back of the tank and is convenient for easy removal.

4. Manifold

The manifold is made of aluminum alloy and is attached to the heated tank. Adhesive from the pump arrives here after being filtered and is dispatched in 2 channels. Two hard pipe tubes are connected with the manifold, where adhesive will flow before reaching the heated hose.



2.3.3 Electrical System

1. Heating System

The heating system consists of the melting tank, flexible hose and nozzle assembly. The heater for the tank is at the tank bottom. The heater for handguns is the cartridge style. RTD temperature controllers are used to detect the temperature of the heating system and send relevant signals to the temperature controller to insure accurateness of $+ / - 3^{\circ}$ F. A mechanical temperature controller is installed in the hot melt applicator.

2. Temperature Controller

Temp. Controlling system can be divided into 2 individually controlled sections. The temp. controller of each system takes $^{\circ}$ C as unit. Two different temperature controllers are utilized:

- (A). Electronic proportional temperature controller.
- (B). Mechanic temperature controller.

3. Electronic Temperature Controller

At first the temperature induced by the thermal couple is transmitted into an electronic signal, and then transferred to the comparison devices of the temperature controller. The device compares the voltage detected by the thermal couple with the preset voltage. The controller sends ON/OFF signal to SSR to control the power switch of the heater.

Of electronic proportional temperature controllers, some control the temperature of melting tank, some control the temperature of nozzle. Normally there is a little structure difference between them.

4. Mechanical Temperature Controller

Inside the mechanical temperature controller, an RTD is applied to detect the temperature of the heating system. When the bar is warmed the solvent will expand because of heat when the temperature reaches preset value, the solvent will be transferred to the temperature controller through the pressure conduit, the spring inside is *kicked off* and cuts off the power. And the heater stops continuous heating. When the temperatures begin to drop, the spring automatically withdraws to where it was kicked off. And once again the heater is ON and continues to give off heat.

Chapter 3 Installation

3.1 Unpacking the Machine

Hot melt applicator G07E05-001 / ECONOMELT has been separately assembled before delivery. The hose and the nozzle assembly are individually packed.

Note: Take care to support the base of the machine when removing the machine from the carton (case). Lift upward never lifting the machine by holding any of the electrical components or surface components.

3.2 Environment for using applicator

1. Make sure the control panel is easily accessible and there is enough room to open the tank lid to add adhesive material to the tank. Please also leave sufficient space around the applicator when installing for easy access and serviceability.
2. Secure the G07E05-001 / ECONOMELT base with four bolts to a sturdy flat surface.
3. Try to avoid locating the machine where the ambient temperature is below 32°F or above 122°F.
4. Try to install the system in a low dust environment. Prevent the machine from vibrating.
5. Install the system where external air flow is minimized.
6. System must be installed in a dry environment.
7. Compressed air to system must be above 20 PSI
Air source after filtered can be kept at 4kg/cm² for general pressure.

3.3 Installation of Hose

1. Attach one end of the hose to the glue outlet of the manifold, tighten the joint with an open wrench. Then insert the power plug into the adapter and screw it tight.
2. Attach the other end of the hose to the hand or automatic gun. First the glue joint then the power plug.

The hoses used for this machine cannot exceed 2.4 meters. Do not keep moving the hose on a cold floor or metal surface. That will reduce the performance of the hose.

3. Install the solenoid and water filter/pressure regulator onto the nozzle assembly, the manifold must be close to the nozzle assembly. Otherwise there will be delay in controlling.

The power rate for this machine should be no more than 120V.

4. Lower the pressure regulator to zero. Get the air source connected.

After filtering and adjustment the min. air pressure is 30PSI (205kPa), to ensure that the nozzle assembly can work properly.

3.4 The Installation of Power Supply

The rated voltage is 120VAC single phase. When installing electric please note the following items:

1. Disconnect the main power source when removing the shield of the electric cabinet.
OR the internal terminal will be electrified even though the applicator is shut off.
2. Do not try to alter the power supply to 220VAC. This will damage the machine.
3. Cut off the power supply to the system.
4. Ensure the breaker has been switched to OFF.
5. If the electric system has no ground line, ensure there is a ground line to be linked to the terminal base.

Note: Please carefully read the following unit before operation.

4.0 Introduction.

The purpose of this section is to G07E05-001-Economelt owners to the electrical function, preparation and system set up.

4.1 Safety Precautions

Always wear safety gloves, safety glasses and protective clothing to prevent operators from being burned by hot melt or by the heated components of the system.

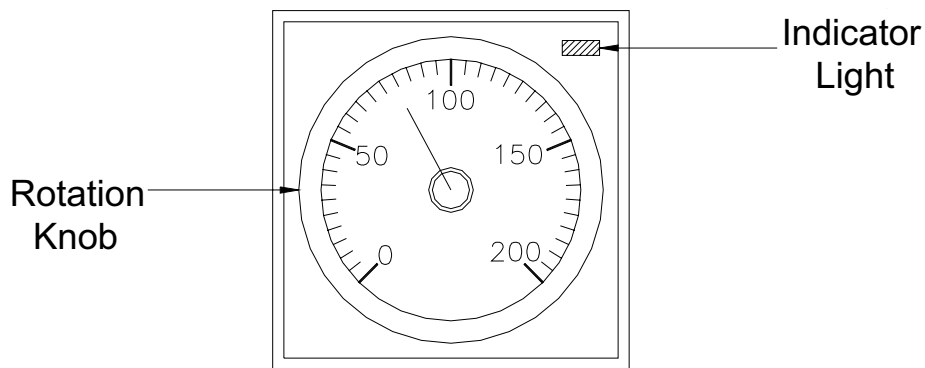
Only qualified service personnel are allowed to service the nozzle assembly joint because of the risk of burns and high voltage.

4.2 Function of the control panel

On the control panel there's only one electronic temperature controller.

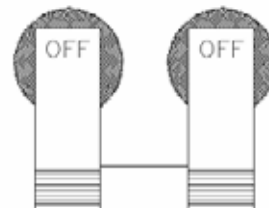
1. Electronic proportion temperature controller

The temperature controller is used to control the temperature of the hose. Rotate the dial to the desired temperature. The red hand on the dial must point to the desired temperature (each scale stands for 5°C). If the indicator in the upper right hand corner of the controller is on the system is heating.



2. Main power switch

Switch the main power to ON, if the indicator on the control panel is ON, that means the machine is powered on.



4.3 Preparation before operation.

1. Insure that all fittings are tight.
2. Insure the power is consistent at 120 VAC
3. Make certain the tank has molten adhesive over the grids.
4. Insure that the desired tank temperature has been reached (approximately 170°C). And the nozzle assembly, approximately 180°C. Please note that all hot melts have different melt rates.
5. Check all connections again.
6. Check if the air supply system is dry and the air pressure is stable.
7. Make sure all the parts are normal.

4.4 Starting the Machine.

1. Attach the power supply and switch on the machine. See if the red indicator is ON.
2. Check if all the temperature controllers are set at the above-mentioned value.
3. When the temperatures are reached the red and green lights on the temperature controller will alternate cycling.
4. Attach the compressed air source, set the value of pressure starting at 10 psi; begin to apply adhesive with the manual gun.

4.5 General Adjustment of Nozzle Assembly

Flow is adjusted to the handgun with the pressure on the pump. Increase air pressure and the flow increases. Maximum output is approximately 2 lbs. per minute. Flow can also be limited by using different sized nozzles on the handgun. Also, lower temperatures will create lower viscosity and has the effect of slowing flow.

4.6 Shutting Down Steps

1. Switch off the main power.
2. Reduce air pressure to the pump to "0" or disconnect air source.

Chapter 5 Precaution and Maintenance

5.0 Introduction

This chapter introduces the safety precautions and maintenance of the G07E05-001 / ECONOMELT Hot melt applicator. Maintenance schedules depend on the adhesive and application and need to be determined by the customer. Proper system maintenance can ensure the high efficiency and long life of the machine.

5.1 Safety Precautions

1. Disconnect the power supply before removing the control panel or shields or any other electric components to avoid injury to personnel or damage to machines.
2. Do not try to disassemble any parts of the manifold, tube or nozzle assembly before you insure that the air pressure on the machine is completely discharged. Severe injury can occur if the system is pressurized.
3. Always wear safety gloves, safety glasses and long sleeved uniforms to avoid being burned by hot melt adhesive or hot surfaces of the system.
4. Do not heat the glued components with an open flame or blowtorch. If it is necessary to heat or clean the components, use an electrical oven.

5.2 Daily maintenance items

1. Before loading hot melt adhesive, check for impurities. These impurities will cause the pump to be blocked or interrupted resulting in damages. After loading, cover the lid of the tank to prevent contamination.
2. Always keep the surface of the nozzle assembly clean to prevent charring, which will lead to the nozzle assembly overheating.

5.3 Monthly maintenance Items

Clean the filter assembly monthly to assure that the applicator operates smoothly.

Please refer to Chapter 6 on how to clean the filter assembly.

5.4 Regular Maintenance

Note: Always wear safety gloves, safety glasses and protective clothing

Note: Before unplugging or plugging air pressure pipe connector or joint mechanism, air pressure must be discharged. Severe injury can occur if the system is pressurized.
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5.4.1 General Maintenance

1. Clean control pressure filter.
2. Clean the power control chamber.
3. Check the wire contacts.
4. Check the connection between the hoses and the nozzle assembly for glue leakage.

5. Check whether the connection between the hoses and the manifold have glue leakage. Leakage occurs in two instances:
 1. If you need to relock the hose and the connector or
 2. The screw threads of the manifold are damaged

5.4.2 Cleaning the Hydraulic System.

Regular cleaning should be carried out in the hydraulic system. In order to clean impurities, take the following steps to replace hot melt adhesive when changing adhesives.

Some cleaning solvents are not compatible with hot melt adhesive. It is best to test the solvent with the hot melt adhesive before cleaning.

The best way to clear the internal hydraulic system is running hot melt adhesive through the manifold, the filter assembly, and the heating hose.

Refer to Chapter 5.3 to disassemble and clean the filter assembly.

5.4.3 Cleaning the nozzle assembly

When the filter assembly is blocked or damaged by impurities or when char is formed in the hose and in the nozzle assembly, the nozzle may become blocked. In some cases, the tube and nozzle assembly need to be replaced with new ones.

Note:

There are three ways to clean the nozzle by using hot melt adhesive:

1. Heat with smokeless hot air gun, and then wipe it with a clean cloth.
2. Dip the nozzle in a cleaning solvent, or
3. Cleaning it with an ultrasonic appliance.

Chapter 6 Disassembly and Maintenance

6.0 Introduction

This chapter contains information on disassembling the filter assembly and the pump.

It is suggested that only qualified technicians perform this procedure.

6.1 Safety Precaution

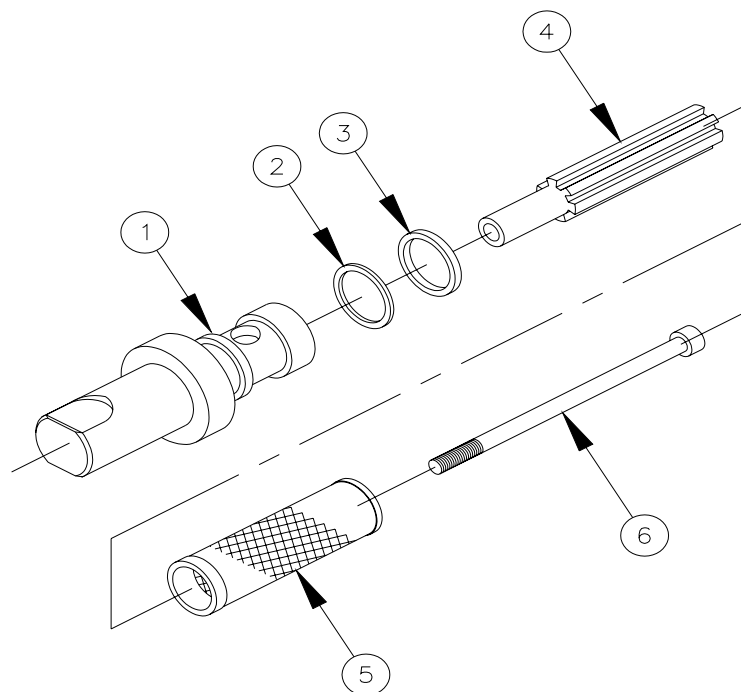
1. Disconnect the power supply before removing the control panel and the shield or replacing electric components to avoid personal injury or equipment damage.
2. Disconnect the air pressure on the machine prior to disassembly of the manifold, hose or nozzle assembly to avoid personal injury or equipment damage.
3. Always wear safety glasses, safety gloves, and protective clothing to prevent injury from hot applicator parts, splashed hot melt adhesive material, and hot nozzle surface.
4. Never heat any component with a torch or other open flame. Use an electrical oven with forced air circulation or a flameless electrical heat gun.

6.2 Disassembly of the Hydraulic System

1. Use a wrench to disconnect the hose joint and pipe plug.
2. Slide the o-ring off the joints.
3. Check o-rings and replace if necessary. If still usable, dip them in a cleaner to soak. Wipe with a clean cloth.
4. When changing the o'ring, check that the o'ring, joint and plug are free of contaminates.
5. Carefully reinstall the joint and plug back onto the manifold being careful not to damage the surface of the o'ring.
6. Use an open wrench to tighten the joint and the plug. Avoid using too much force.

6.2.1 Disassembly of the Filter Assembly

The following covers the maintenance of the filter assembly. Clean the nozzle assembly each month.



*Figure 6.1 The Filter Assembly

1. Before dismantling the filter assembly the machine must be warmed up to normal working temperature.
2. Release the remaining air pressure inside the hydraulic system.
3. Place a container where the hose and manifold meet. Remove the hose with an adjustable spanner.
4. Adjust to the correct air pressure, and then start the cylinder pump to push the hot melt out of the manifold and into the container. Do not stop the cylinder pump until all the impurities have been pushed out.
5. Remove the filter assembly with the adjustable spanner and vertically remove the filter assembly.
6. To dismantle the filter assembly, first remove the screw, then dismantle the filter and the core then remove the spacer and the O-ring from the bolt.
7. Check all dismantled parts for damages. If components, especially the filter and the O-ring are damaged, change them with new ones.
8. If no components are damaged dip all old ones into the cleaning solvent. If necessary use hot air gun or flameless dryer to clean. Clean the filter with a brush. Never use a steel brush or the filter will be torn open. Washed components need to be cleaned with a clean cloth.
9. Assemble the cleaned components and reinstall into the manifold. Properly tighten the filter assembly with adjustable spanner. Never use too strong force to avoid damaging the o-ring and the screw threads of the manifold.
10. Adjust the system to the normal working pressure and start the cylinder pump letting the hot melt adhesive pump steadily into a container. Switch off the motor when the hot melt adhesive becomes clear. Clear the nozzle assembly each month until this

can be done less frequently.

6.2.2 Disassembly of the Pneumatic Pump

If the hot melt does not flow out or is inconsistent check the following:

- The o-ring inside the pump may be worn
- The surface of the pneumatic pump is scratched, which leads to air leakage or unstable driving pressure (the latter indirectly affects the flow rate of hot melt).

The following refers to disassembling and checking the pneumatic pump. We suggest that only qualified technicians perform this procedure.

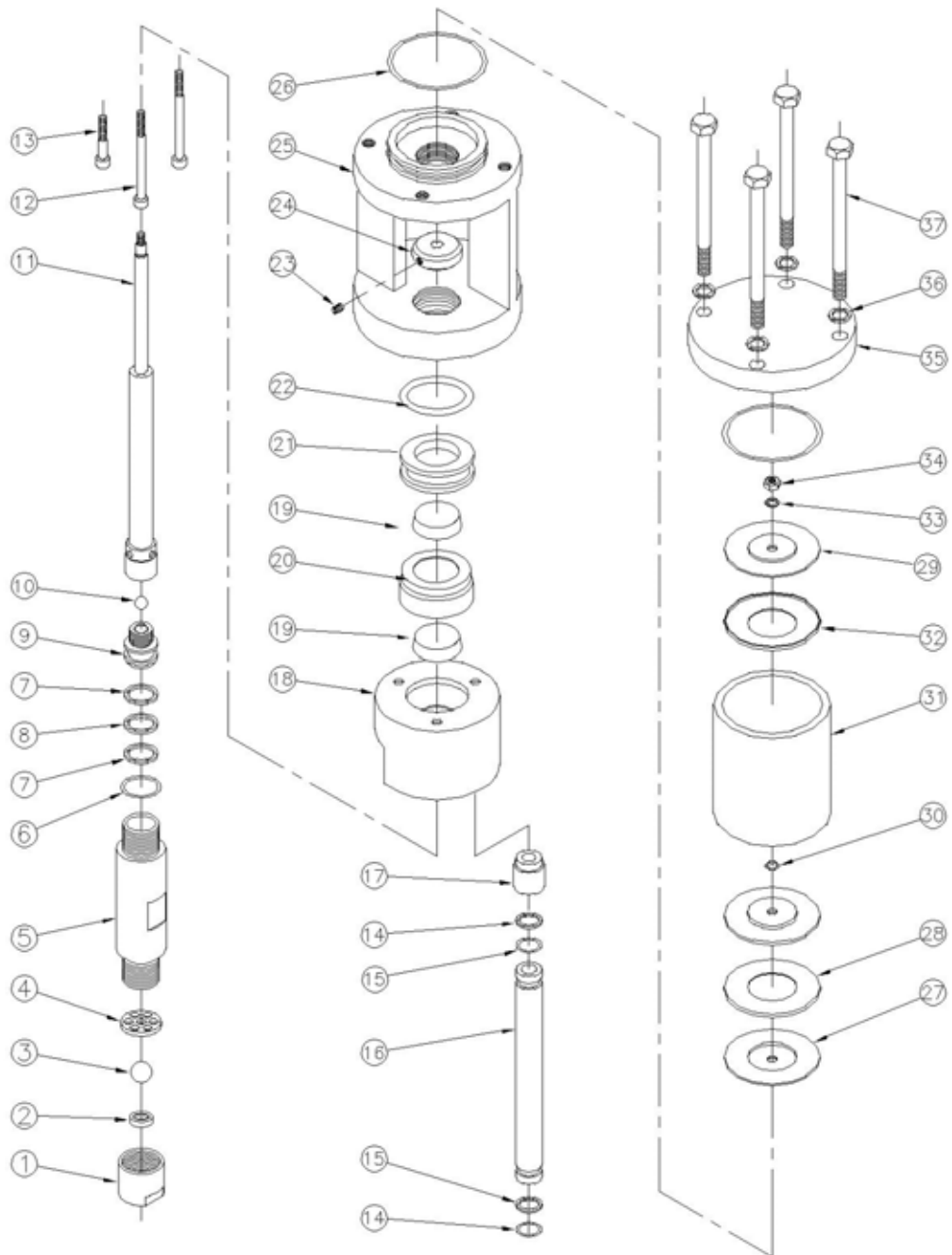


Figure 6.2 **The Pneumatic Pump**

1. Remove the shield of the pump, and then remove the two micro switches from the cylinder base.

Note: Disconnect the power supply before removing the micro switch.

2. Heat the machine to normal operating temperature. When the hot melt in the melting tank is completely melted, loosen the three hexagon bolts that attach the pneumatic pump to the melting tank.
3. Wear gloves and carefully take the pump out of the tank vertically.
4. Clean the pump with a cloth. Disassemble the pump as the picture shows.
5. Vertically take the glue pipe (16) out of the washer (17).
6. Remove the tightening nut with adjustable spanner (13).
7. Take the steel ball (3) out of the tightening nut (1).
8. Open the cylinder (31) with an adjustable spanner. Carefully take the cylinder out along the cylinder shaft (11).
9. Remove the fixing ring (9) with the adjustable spanner and take the steel ball (10) out of the cylinder shaft.
10. Loosen the bolts (35) that secure the cylinder with an open-ended spanner, and then take out the four bolts.
11. Remove the cylinder cover (35), and carefully take out the cylinder (31). Do not damage the leakage proof washer and the o-ring.
12. Loosen the nut (34) with an open-ended spanner; gently remove the leakage proof washer (28), the piston plate (27) and the piston ring (24).
13. Loosen the anti-slip nut (23) and take the cylinder shaft (11) out of the cylinder (25) vertically. Do not scratch the leakage proof components.
14. Use the Hexagon spanner to remove the hexagon screw (13) that secures the connection base (18) on the cylinder base.
15. Remove the leakage proof washer (includes (20), (22), (19)) and the tightening ring (21).
16. Remove all the o-rings from each component. This is the end of the disassembly.
17. Check all components for damage, especially the o-rings. Check for scratches on the cylinder surface. Change to a new one if necessary.
18. If components are in good condition, dip them into the cleaning solvent. If necessary, heat them with hot air gun or flameless heater. After cleaning, wipe all components with a clean cloth.
19. Referring to the figure 6.2, reassemble the pump with good components (old or new) and fix it on the applicator.

Chapter 7 Trouble Shooting

7.0 Introduction

We offer the following troubleshooting procedures. These general problems should be resolved in regular routine equipment maintenance.

7.1 Safety Instructions

1. Disconnect and lockout input electrical power to the applicator before removing any panels or any electrical device in order to avoid personal injury or equipment damage.
2. Before disconnecting any part of this applicator, ensure that the system pressure has been relieved in order to avoid personal injury or equipment damage.
3. Always wear safety glasses, safety gloves and protective clothing to prevent injury from hot melt applicator parts, splashed hot melt adhesive material and the surface of the hot melt device.
4. Never heat any component with a torch or other open flame. Use an electrical oven with forced air circulation or a flameless electrical heat gun.

7.2 Troubleshooting of Mechanical and Electrical Parts

Problem	Possible Cause	Solution
Tank fails to heat or underheats (cannot reach pre-set temperature)	1. Main power is not ON or switch trouble.	Put power switch ON (check for loose connection) or replace with a new switch.
	2. Temperature controller for tank is not set at the right temperature.	Readjust the temperature controller.
	3. Temperature controller is set too low.	Reset the temperature controller.
	4. Heating bar or temperature controller has failed.	Check for loose wiring to heater. If not loose, replace heater or temperature controller.
Hose fails to heat or underheats (cannot reach pre-set temperature)	1. Fuse base is loose or blown.	Replace the fuse with a new one and tighten the fuse base.
	2. Hose temperature controller has failed.	Replace with a new temperature controller.
	3. RTD is broken.	Replace with a new RTD.
	4. Hose heater is not functioning.	Replace with a new heater.
Nozzle assembly fails to heat or underheats (cannot reach pre-set temperature)	1. Fuse base is loose or blown.	Replace the fuse with a new one and tighten the fuse base.
	2. The temperature controller has failed.	Change with a new temperature controller.
	3. RTD is not functioning.	Replace with a new RTD.

	4. Heater is not functioning.	Replace with a new heater.
Hot melt adhesive flow fails or is not smooth.	1. Pressure is too low.	Adjust the pressure valves to the preset pressure.
	2. The preset temperature is not reached.	Do not operate the machine until the system reaches the preset temperature.
	3. Nozzle is blocked.	Disassemble the nozzle and clean it with solvent. Please refer to Ch.5.
	4. Solenoid is broken.	Replace with a new solenoid.
	5. The filter inside the nozzle assembly is blocked.	Disassemble the device, clean and change the interior filter
	6. The filter inside the manifold is blocked.	Disassemble the filter assembly and clean the interior filter.
The tank keeps heating continuously.	1. RTD is completely detached or only a small part is inside the heating plate.	Put the RTD into the heating plate completely.
	2. SSR connection becomes loose or is damaged.	Replace with a new one.
	3. RTD has failed.	Check the wire or replace with a new one.
Nozzle tip dripping.	1. Nozzle temperature is set too high.	Reset the nozzle temperature.
	2. Nozzle tip does not tighten enough.	Tighten the nozzle tip once again.
	3. The main part of the nozzle is damaged.	Replace with a new one.
The nozzle assembly keeps heating continuously.	1. RTD is completely detached or only a small part is inside the heating plate.	Reinstall the RTD well.
	2. SSR is damaged.	Replace with a new one.
	3. PID temperature controller is damaged.	Replace with a new one.
	4. RTD is shorted.	Check the wiring or replace with a new one.
Hot melt flows out of the manifold and cannot work continuously.	1. Not enough hot melt in the tank.	Add more hot melt
	2. Hot melt in the tank is not completely melted or the melting rate is too small.	Do not start the pump until hot melt in the tank is completely melted.
	3. The CPS of the hot melt is too high. (Over 10,000 CPS), or too low.	Choose the proper hot melt.
	4. Impurities cause the check valve to operate improperly.	Ask a qualified technician for service or replacement.

	5. O-ring or anti-leakage ring for the piston is broken	Ask a qualified technician for service or replacement.
Hot melt adhesive fails to flow.	1. Hot melt in the tank is not melted completely or there is no hot melt.	Add more hot melt. Do not start the pump until the hot melt is completely melted. Adjust the preset temperature if it is too low.
	2. The pneumatic pump is not working.	Set the pressure adjustment valve to the correct operating pressure.
	3. Pump is not working.	Check the following steps 4-12.
	4. The applicator, hose or nozzle assembly does not heat or does not reach the preset temp.	Check whether these parts can heat to the preset temperature. Or replace possible damaged fuse, RTD, or heater. Check electric contacts.
	5. The tip of the nozzle assembly Is blocked.	Clean the tip.
	6. The nozzle air pressure is not reached.	Set air pressures to operating pressure or change the broken pressure-related parts.
	7. Controlling circuit of the nozzle assembly such as the timer, foot-switch, Photoelectric switch and solenoid valve are not working properly.	Check whether the controlling circuit is loose or not connected properly. Otherwise, change the damaged part.
	8. The nozzle assembly is broken.	Change the nozzle.
	9. The filter inside the nozzle assembly is blocked.	Disassemble the device, clean and change the interior filter
	10. The filter inside the manifold is blocked.	Disassemble the filter assembly and clean the interior filter.
	11. The hose is blocked.	Replace or clean the hose.
	12. Micro-switch on the pneumatic pump does not work.	Reinstall the micro switch or replace with a new one.
	13. The solenoid valve that controls the pressure circuit is broken. The pressure tube or the pressure connector is damaged.	Replace damaged air-pressure components.
	14. Circuit controller relay is broken.	Change the relay or check whether the circuit is loose or disconnected.
	15. The setup temperature of the Piston pump is too high to actuate the solenoid valve.	Have a qualified technician adjust the setup temperature according to the ambient air temperature.
	16. The cylinder pump is blocked. (If the cylinder pump works normally, please check the following steps).	Replace the cylinder pump.

	17. The CPS of the hot melt is too high (over 10,000 CPS) or too low.	Choose the proper hot melt.
	18. O-ring, back-packing or feed-back valve is blocked.	Have a qualified technician service or replace (refer to Chapter 6.2.3 & 6.3).

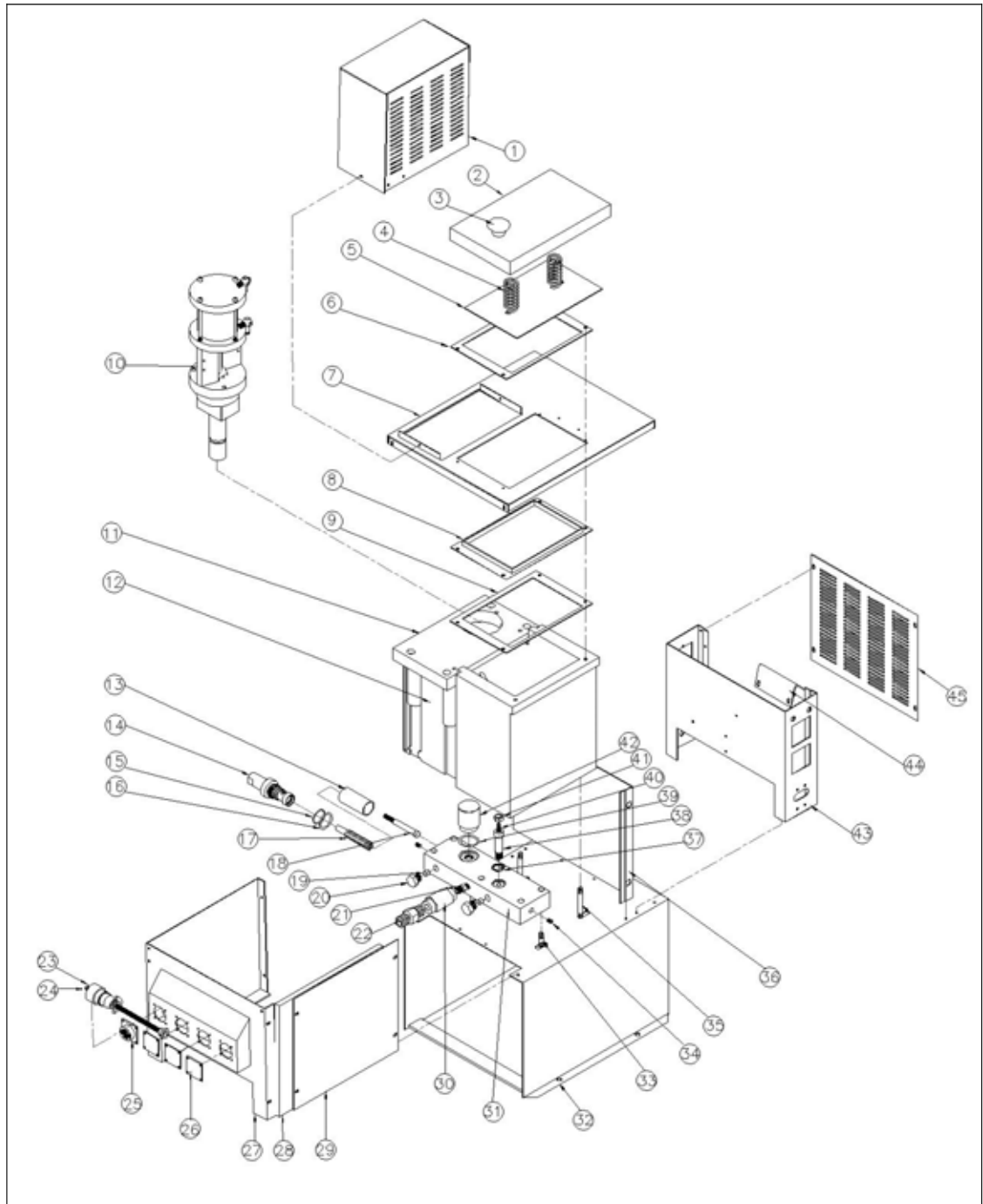
7.3 Troubleshooting Hot Melt Application

Problem	Possible Cause	Solution
Large adhesive volume at the start of the application	1. Too much pressure in the cylinder pump.	1. Adjust the pressure of the valve.
	2. The tip of the nozzle assembly is too far from the coating material.	2. Adjust the distance between the nozzle and the coating material to approximately 0.5 inches (12.7mm).
	3. The tip is slightly blocked.	3. Disassemble and clean the tip.
Large adhesive volume at the end of the application	1. Low pump pressure.	1. Adjust the valve pressure.
	2. Hot melt adhesive temperature is too low.	2. Adjust the temperature of each heating zone.
	3. The tip is too long or not hot enough.	3. Adjust the nozzle temperature or change the tip size.
Central hollow application in dot spraying.	1. The hot melt adhesive is too hot.	1. Adjust the temperature of each heating zone.
	2. The viscosity of the hot melt adhesive is too low.	2. Change to the proper hot melt adhesive.
Hot melt bouncing or splashing from coating material.	1. The hot melt adhesive is too hot.	1. Adjust the temperature of each heat zone.
	2. Cylinder pump pressure is too high.	2. Adjust the valve pressure.
	3. The hot melt adhesive is too low in viscosity.	3. Change to the proper hot melt adhesive.
	4. The nozzle orifice is too big.	4. Change to a smaller orifice nozzle.
The coating surface becomes wavy.	1. Ambient temperature is below 0 .	1. Recommended temperature is 0 to 50 .
	2. The nozzle assembly and the tip exposed to the cold air.	2. Proper heating material is recommended to cover the nozzle assembly and the tip.
	3. Temperature of the nozzle assembly is too low.	3. Adjust the working temperature of the nozzle assembly.
	4. The tip of the nozzle assembly is too far from the coating material.	4. Adjust the distance between the nozzle and the coating material to approximately 0.5 inch (12.7mm).

Hot melt cannot penetrate the coating surface.	1. Hot melt adhesive is not hot enough.	1. Adjust the temperature value of each heating zone.
	2. There is a film covering the coating surface.	2. Adjust the hot melt adhesive to a higher temperature. If there is no improvement, replace it with another adhesive.
	3. Coating amount is not enough.	3. One is to raise the operating temperature or pressure on the cylinder pump. The other is to replace the nozzle with a larger diameter nozzle to increase the hot melt flow rate.
	4. Hot melt adhesive is too high in viscosity.	4. Change hot melt.
Bubbles or vapor are produced when the hot melt is coating.	1. Not enough hot melt adhesive in the tank leads to the air suction in the cylinder pump.	1. Add the proper amount of hot melt adhesive.
	2. Hot melt adhesive is too high in viscosity.	2. Change hot melt.
	3. The coating surface is humid.	3. Preheat the surface to be coated.
Adhesive in the tank cannot be melted completely.	1. Two kinds of incompatible hot melt adhesives are mixed.	1. Pump out the hot melt adhesive with a piston pump. If the problem is not solved, it may be necessary to change the tank, manifold, hose and the nozzle assembly.
	2. The heating time of the hot melt adhesive is too long.	2. Consult your hot melt adhesive supplier for proper heating time.
	3. The heating temperature of hot melt adhesive is too high.	3. Consult your hot melt adhesive supplier for proper heating temperature.
Hot melt adhesive in the tank fumes or bubbles	1. The operating temperature of the hot melt adhesive is too high.	1. Adjust the operating temperature.
	2. The stability of the hot melt adhesive is not good.	2. Close the cover of the melting tank tightly, or change to a more stable adhesive.
Hot melt in the melting tank is charred.	1. The operating temperature of the hot melt adhesive is too high.	1. Adjust the operating temperature.
	2. Adhesive in the melting tank is overheated.	2. Check that the heating system and the overheat protection switch work properly.
	3. Not enough adhesive in the melting tank.	3. Add the proper amount of adhesive to the tank.
	4. Hot melt adhesive in the melting tank is oxidized.	4. Secure the covers of the hot melt applicator tightly.

Chapter 8 Drawings of Spare Parts

8.1 Assembly Drawing of Metal Plates

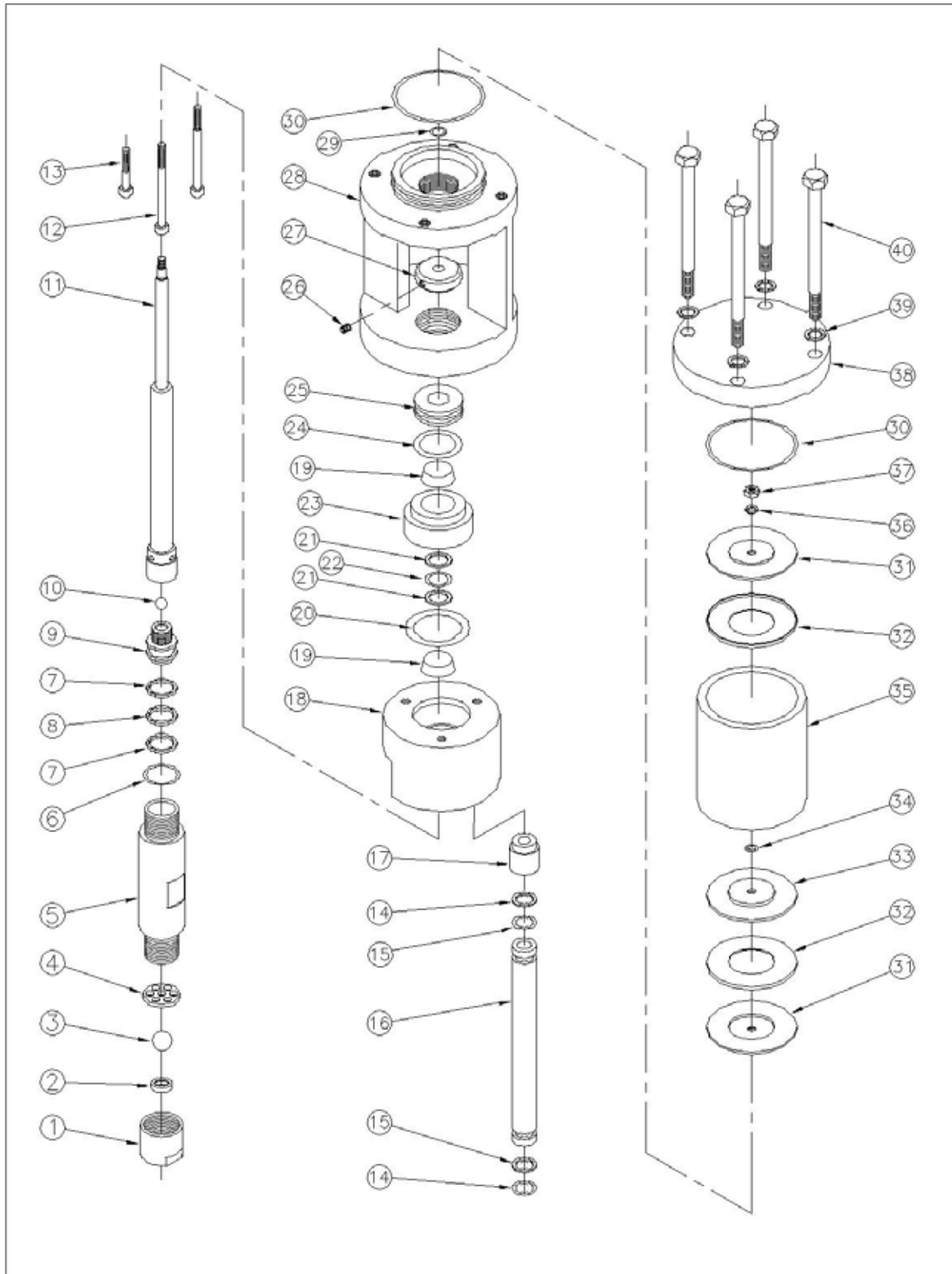


(Fig. 8.1) Assembly Drawing of Metal Plates

No	Description	Qty.
1	Cylinder Cover	1
2	Tank Cover	1
3	Handle	1
4	Spring	2

5	Fasten Board	1
6	Bi Plate	1
7	Upper Cover	1
8	Fasten Rectangular	1
9	Insulation Plate	1
10	Pneumatic Cylinder Pump	1
11	Fasten Plate	1
12	Tank	1
13	Double Layer Filter	1
14	Bolt	1
15	Packing; Back up Ring	2
16	O-Ring	1
17	Supporter	1
18	Socket Head Screw	1
19	Washer	2
20	Plug Screw	2
21	Double Thread Joint	1
22	Hydraulic Joint	1
23	Golden Female Terminal	4
24	Silver Female Terminal	4
25	14P Terminal Block	1
26	Rectangular Plastic Plate	3
27	Side Panel(Left)	1
28	Fiber Glass	0.5rl
29	Hind Cover	1
30	Ball Valve	1
31	Manifold	1
32	Hind Cover	1
33	Supporter(Short)	2
34	Plug Screw	2
35	Supporter(Long)	2
36	Side Panel(Right)	1
37	O-Ring	1
38	Narrow Valve Base	1
39	O-Ring	1
40	Pressure Regulation Shaft	1
41	Screw Nut	1
42	Guide Funnel	1
43	Control Box	1
44	Fixing Base	1
45	Cover Board	1

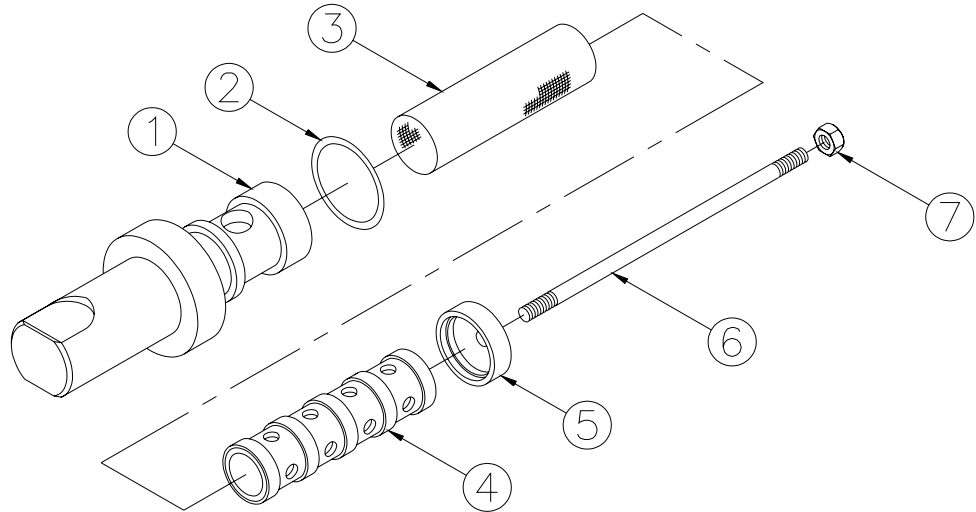
8.2 Assembly Drawing of Pump



3	Iron Ball	1
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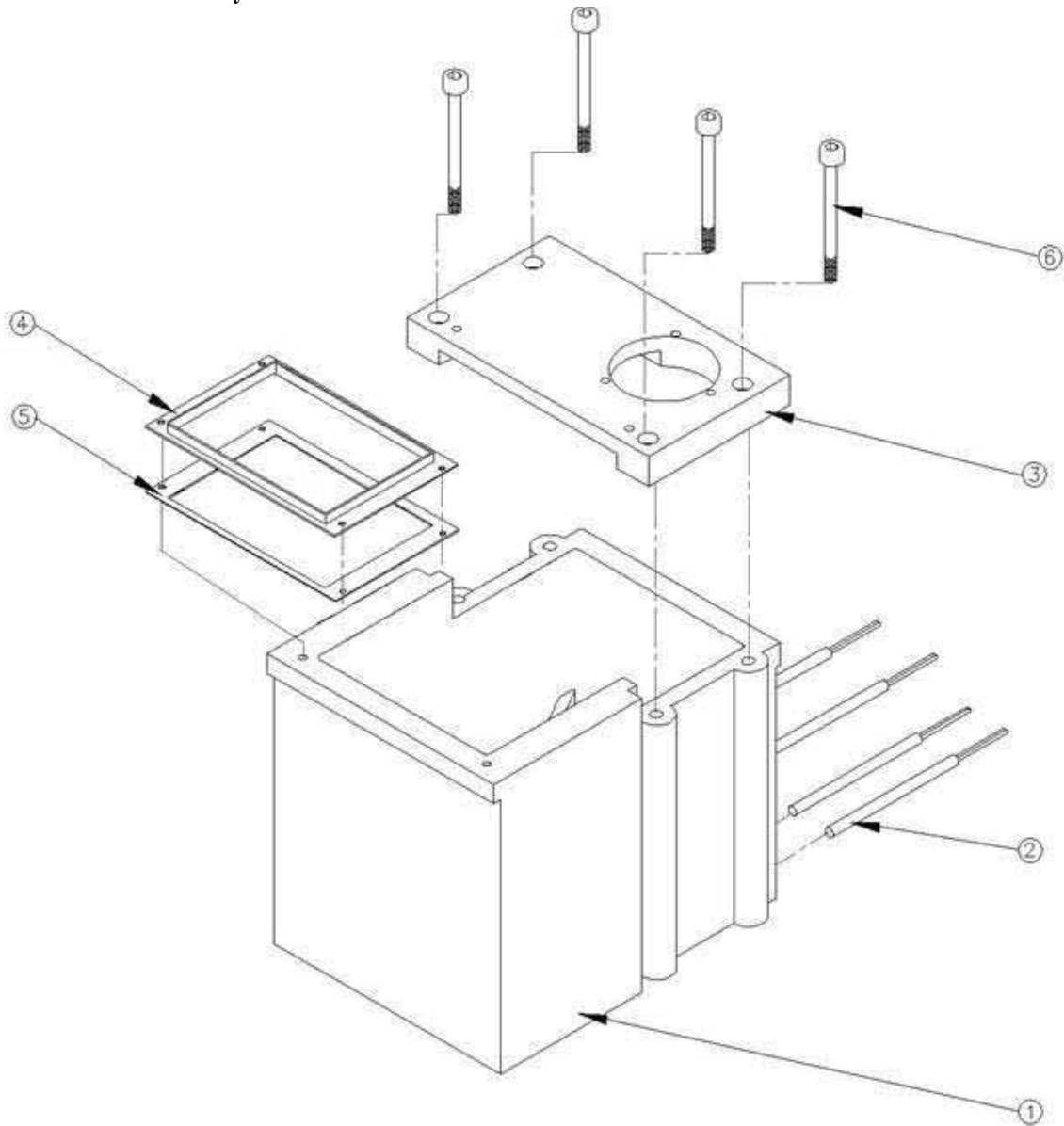
4	Filter Plate	1
5	Glue Pipe	1
6	Washer	1
7	Packing	2
8	O-Ring	1
9	Fixing Ring	1
10	Iron Ball	1
11	Cylinder Shaft	1
12	Socket Head Screw	2
13	Socket Head Screw	1
14	O-Ring	2
15	Packing	2
16	Guide Pipe	1
17	Guide Sleeve	1
18	Connection Base	1
19	U-Packing	2
20	O-Ring	1
21	Packing	2
22	O-Ring	1
23	Sealing	1
24	O-Ring	1
25	Sealing	1
26	Set Screw	1
27	Stopper	1
28	Cylinder Base	1
29	O-Ring	1
30	O-Ring	2
31	Piston Plate	2
32	Seal	2
33	Piston Ring	1
34	O-Ring	1
35	Cylinder	1
36	Washer	1
37	Screw Nut	1
38	Hind cover of Cylinder	1
39	Washer	4
40	Socket Head Screw	4

8.3 Filter Web Assembly



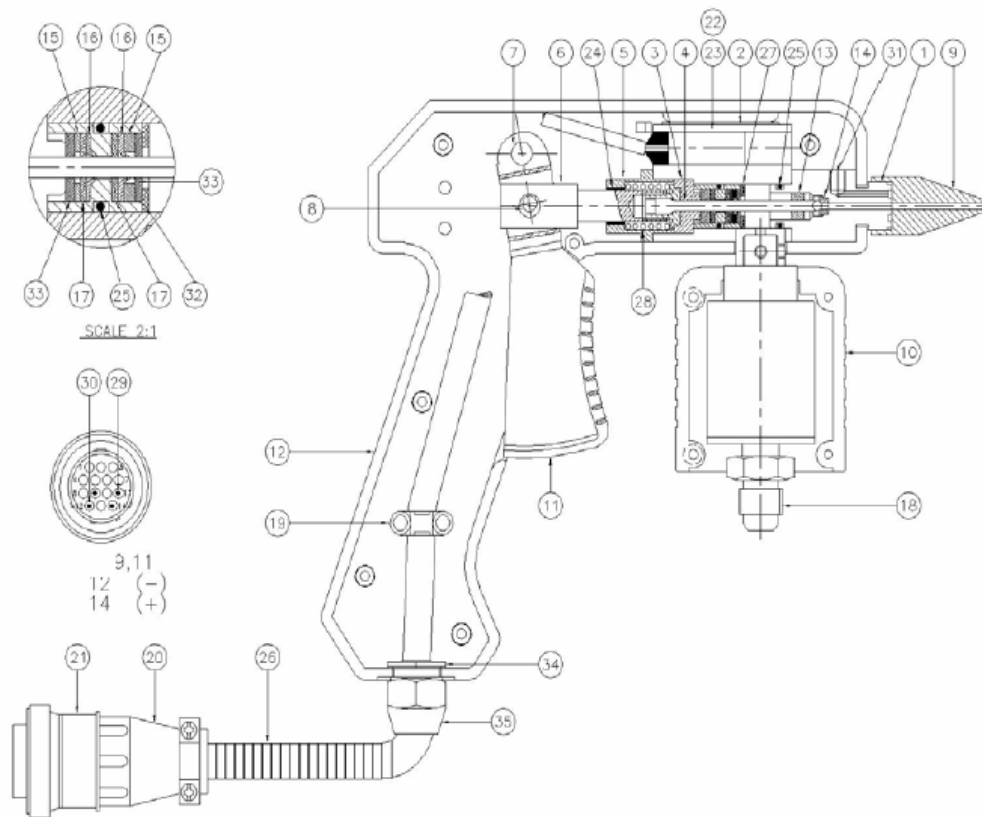
No.	Description	Qty.
1	Regulation Shaft	1
2	Packing; Back Up Ring	1
3	O-Ring	1
4	Supporter	1
5	Double-Layer Filter	1
6	Hexagon Bolt	1
7	Nut	1

8.4 Tank Assembly



No.	Description	Qty.
	Tank Assembly	1
1	Tank	1
2	Heater	4
3	Tighten Plate	1
4	Tighten Rectangular	1
5	Heat Insulation Layer	1
6	Hexagon Bolt	4

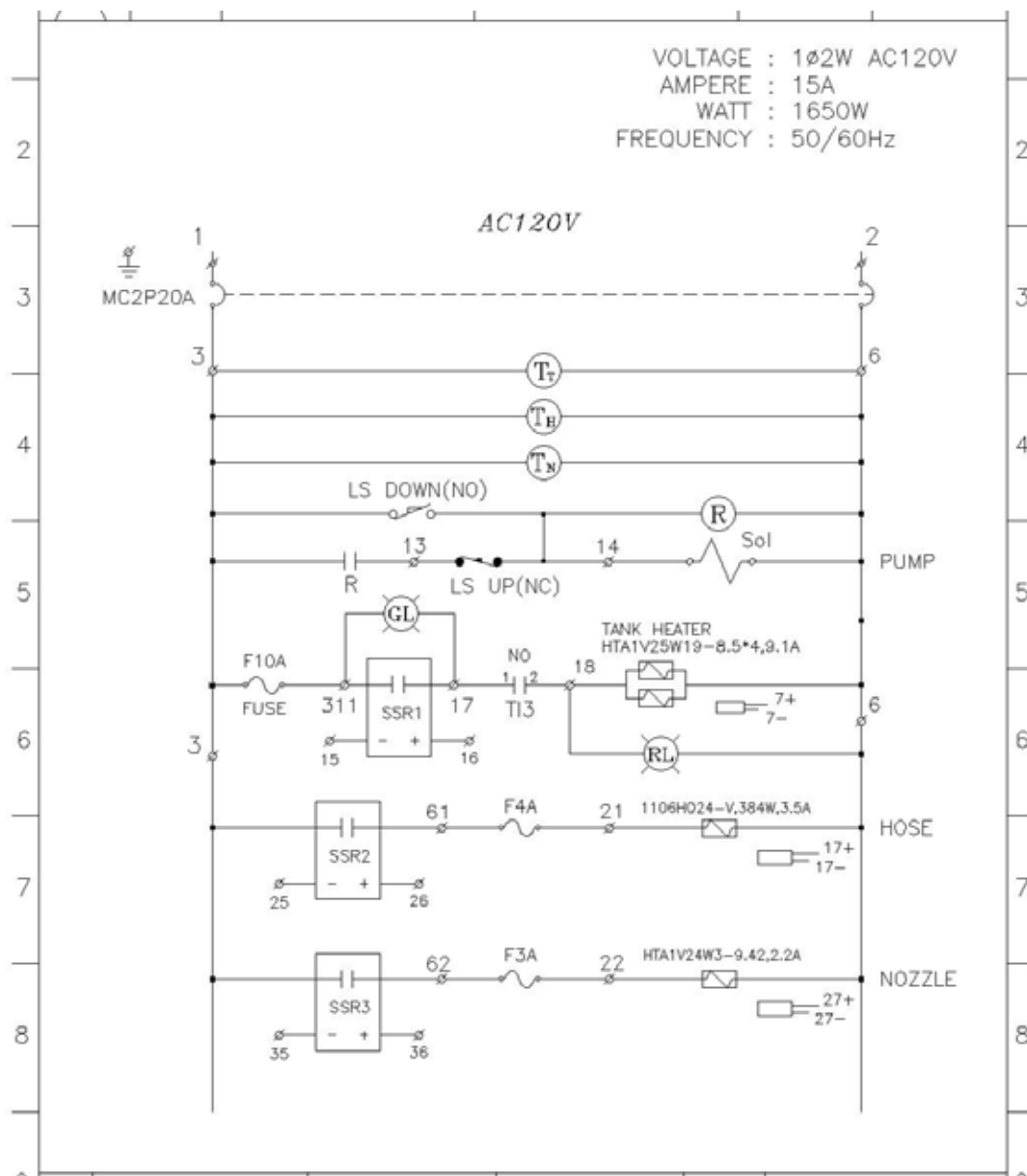
8.5 The Hot Melt Gun Drawing



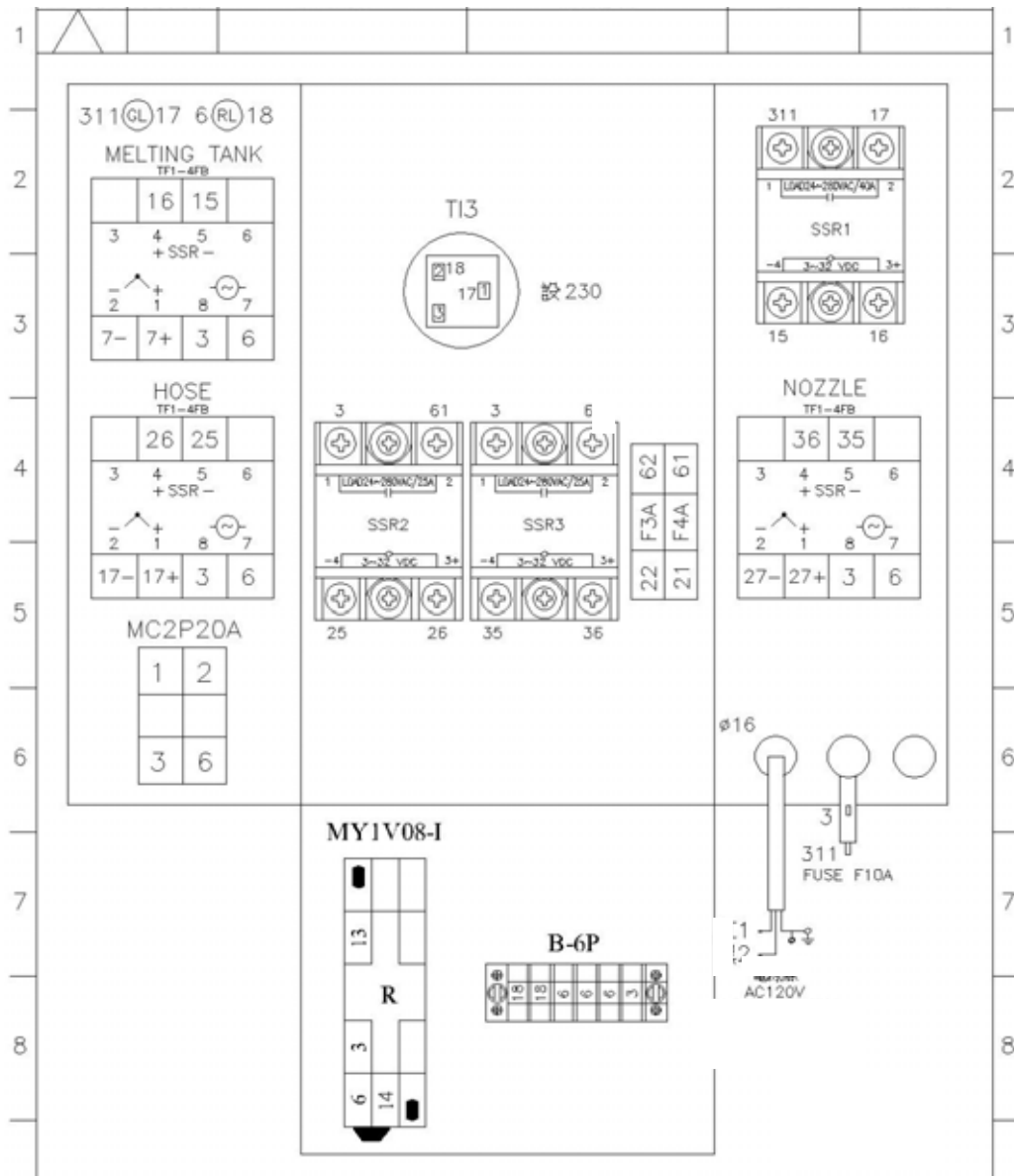
No.	Name	Part Number	Quantity
1	Connecting Cover		1
2	Gun Body		1
3	Cot		1
4	Glue-out Shaft Set		1
5	Spring Fix Outlet		1
6	Trigger connection pole		1
7	Positioning Pin		1
8	Connecting Pin		1
9	Tip		1
10	Cot		2
11	Trigger		1
12	Gun Shell		1
13	Chase		1
14	Glue-out head		1
15	Washer		2
16	Anti-leakage Ring		2
17	Anti-leakage Ring		2
18	Spiral Connecting Set		1

19	Wire Fix Part	1
20	Plug	1
21	14P Terminal Plug	1
22	Heater	1
23	Temperature Sensor	1
24	Bearing	1
25	O-Ring	2
26	Cot Set	1
27	Snap-ring	1
28	Compressed Spring	1
29	Pin(male)	2
30	Pin(female)	2
31	Screw	1
32	Bushing	1
33	Snapper-ring	2
34	Cot	1
35	Wire Cot	1

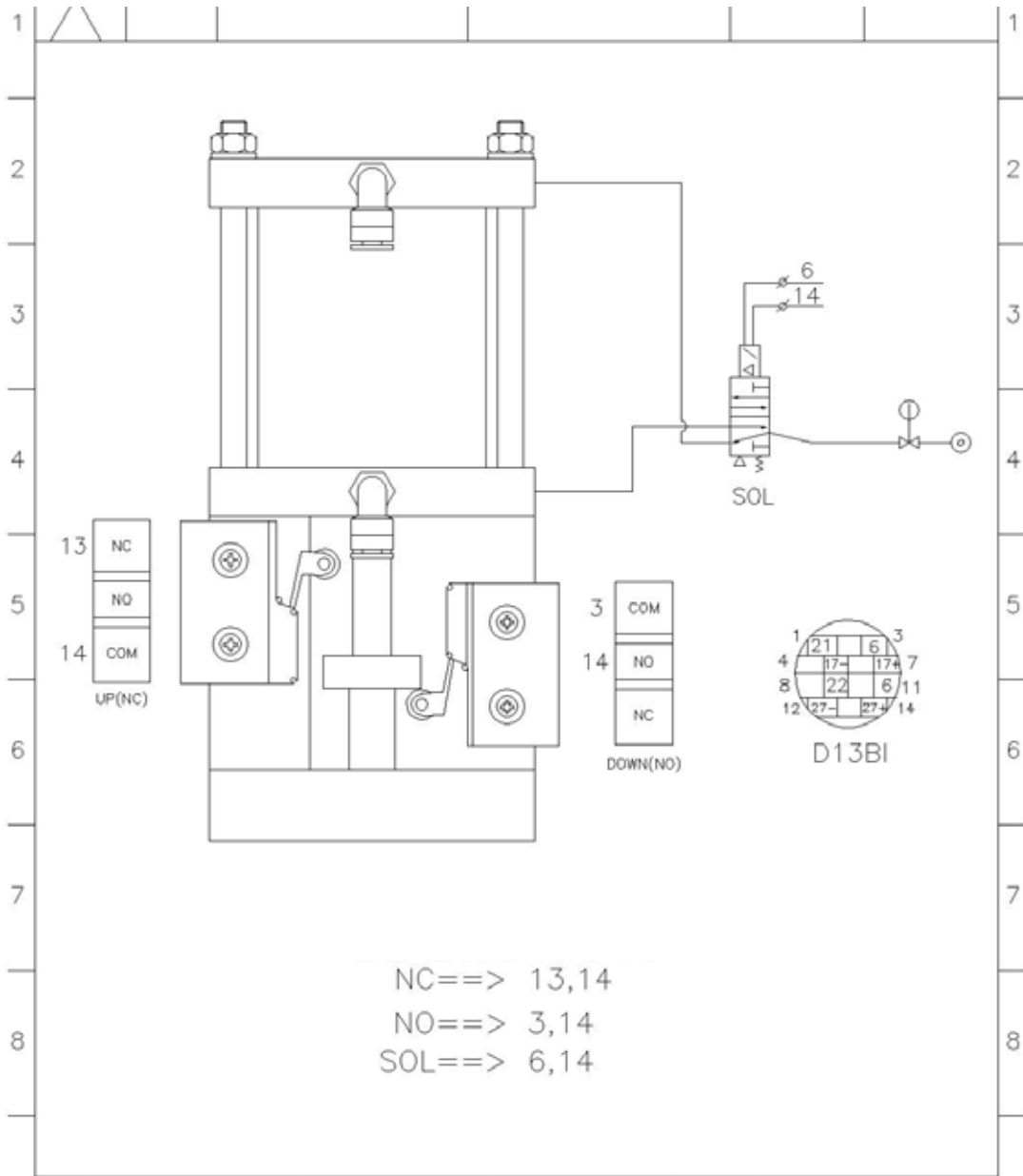
Chapter 9 Wiring Diagrams



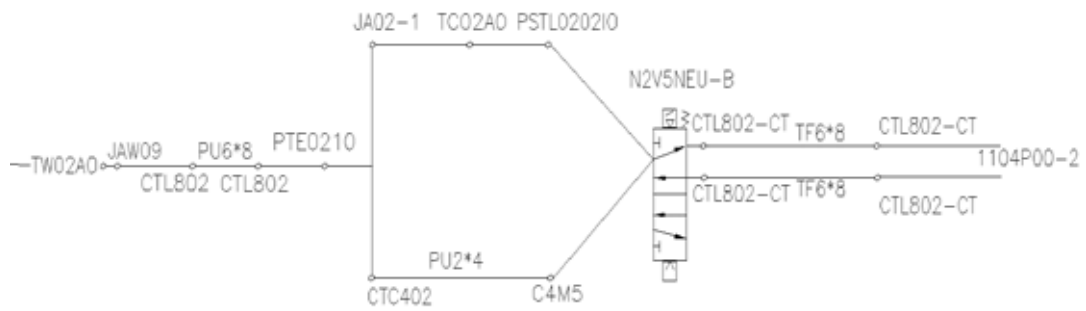
Wiring / Diagram 1



Wiring / Diagram 2



Wiring / Diagram 3



Wiring / Diagram 4