

GMS

Gluing Machinery & Systems, Inc.



GMS[®] Hot Melt Gluing System Operation and Maintenance Manual

**Covering Basic Operation for the
GMS HM25 Hot Melt Unit
(25# Tank)**

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HM25 HOT MELT GLUING SYSTEM OPERATION & MAINTENANCE MANUAL

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(Enclosed in a separate envelope)

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Chapter 1

General Description

The Gluing Machinery & Systems, Inc's **microglue**[®] Hot Melt Gluing System is used for melting and pumping hot melt thermoplastic adhesives. The system consists of the melt unit, heated supply hose(s), and applicators. System operation is further enhanced by the use of pattern controllers, timers, foot switches, or other such devices. All temperatures in the microglue system are controlled by closed loop electronics using thermistor-based sensors.

1.1 Melt Unit

The **microglue**[®] melt unit is able to pump a variety of thermoplastic materials, such as packaging or product assembly adhesives, wax, and various potting materials. The melt unit consists of a heated melt tank with a motor-driven, positive-displacement gear pump. The tank has a 25 pound capacity with an integral melt grid. The unit is completely electric; it does not require the use of compressed air for operation. The wide-mouth design of the tank lid allows use of virtually any form of adhesive, including granules, flakes, pillows, and blocks. The tank's integral melt grid transfers heat efficiently from the heaters to the thermo-plastic material. Temperatures are selected using a membrane key panel located on the front of the unit. Output pressure is electronically monitored and controlled through the front panel as well.

1.2 Supply Hoses

The **microglue**[®] melt unit supports up to eight hot melt supply hoses. The output manifold has eight outlets to channel adhesive flow to the supply hoses. Temperatures for each hose are individually selected using the front panel. All hoses are electrically and mechanically attached to the melt unit via easy access connectors on the back of the melt unit.

1.3 Applicator Heads

Applicators used with the **microglue**[®] melt unit are connected electrically and mechanically to the supply hoses. Temperatures for each applicator are individually selected using the front panel of the melt unit.

Automatic applicator heads will typically be used in conjunction with a pattern controller, timer, or other switching device attached to the auxiliary connector on the melt unit; pump motor switching and proportional pressure control are also accomplished automatically via this connection. Handgun applicators are generally used in manual application systems and possess an integral reed relay switch on the pistol grip to control the melt unit pump motor.

1.4 Electrical Considerations

Electrical power to the microglue melt unit is controlled by a circuit breaker located at the lower right back side of the melt unit. The system is designed to be energized from a 30amp power source. Hoses, applicator heads, and pattern control devices (timers, foot switches, etc.) are designed with multi-pin plugs to easily connect to the melt unit for simplicity of installation. All connections are located at the rear of the melt.

1.5 Safety Considerations

The following safety features are included in each melt unit:

- The tank, hoses, and applicator heads are monitored for over temperature conditions. The affected zone is shut down if an error condition is detected. An LED indicator is lit until the error condition is corrected when the tank, supply hose or applicator is sensed to be over temperature or sensing incorrectly.
- An emergency stop switch is located on the front of the unit. When pressed, primary power to the unit is shut off. The unit is also equipped with a circuit breaker on the back as well as a input power fuse.
- Operation of the pump/motor is inhibited until the melt tank reaches approximately 90% of the selected temperature. This prevents damage to the pump/motor by attempting to operate while the adhesive is too viscous to be pumped.

1.6 Maintenance Considerations

Microglue hot melt systems are designed with simplicity and reliability in mind. Troubleshooting, maintenance and service are quite easy. Front panel diagnostics isolate specific zones which may be experiencing fault conditions. All electrical components are designed for easy access using ordinary hand tools. Modular design minimizes down time in the event of sub-assembly failures.

Chapter 2

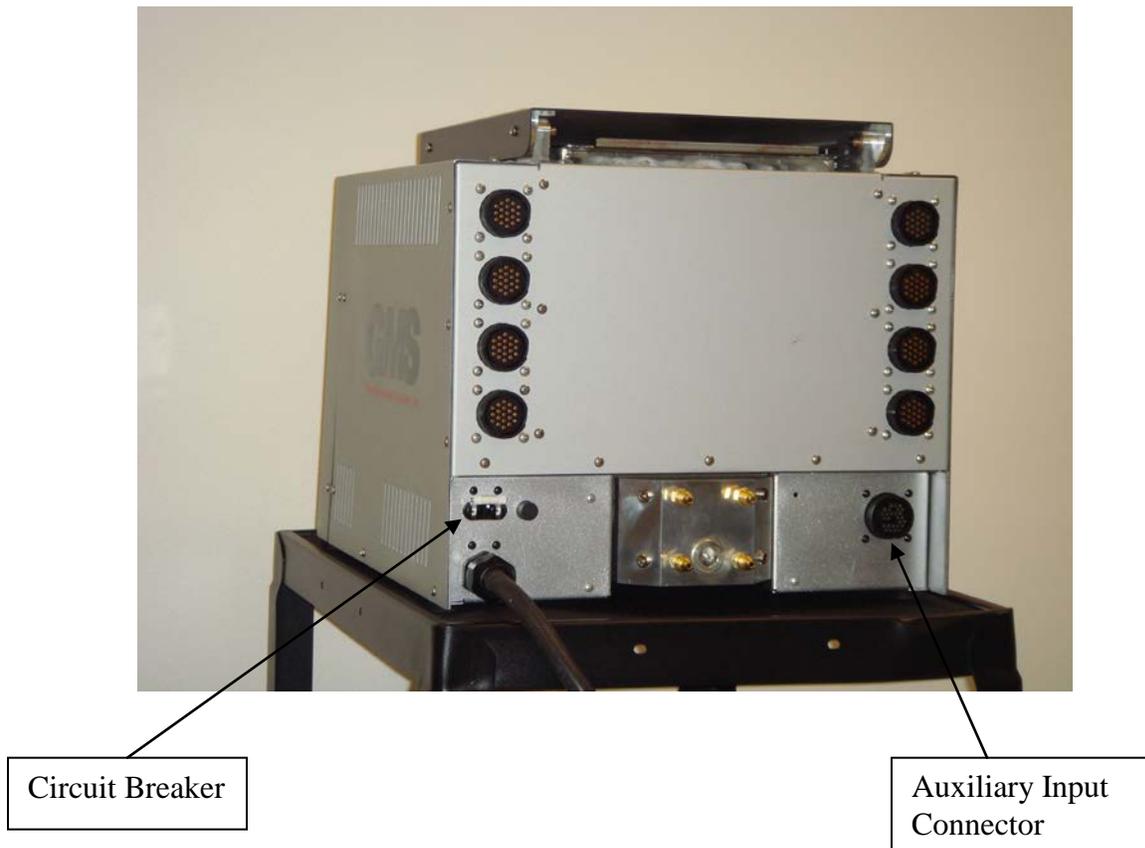
Controls and Indicators

This section covers the operating controls and indicators found on the HM25 hot melt unit. Please read them carefully before attempting to operate the machine.

2.1 On/Off Switch and Circuit Breaker

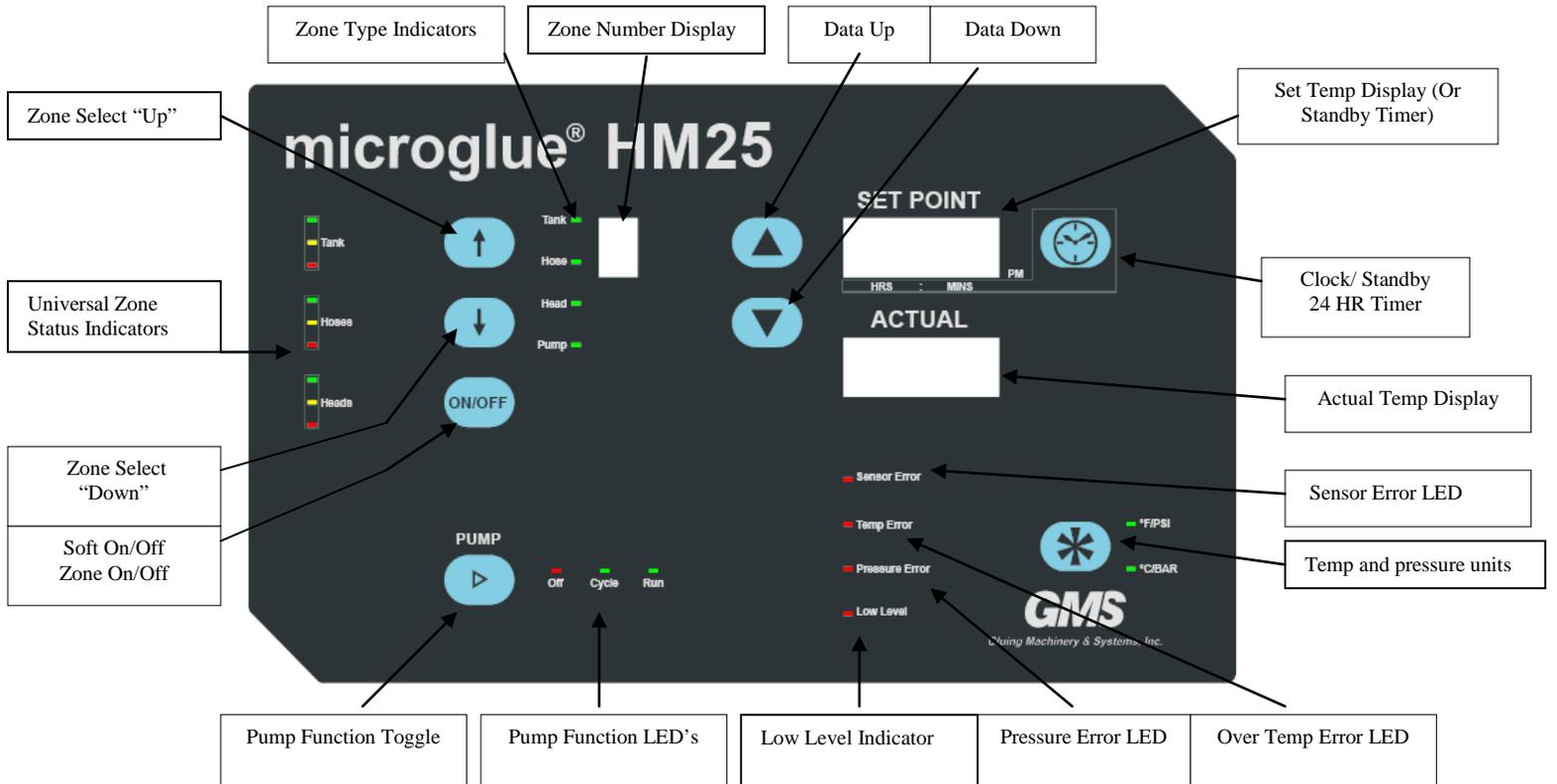
The circuit breaker in the rear of the unit turns on and off all power to the melt unit as well as protects against excessive current being drawn in case of malfunction. Once the circuit breaker is on, the unit can be controlled using the “soft” ON/OFF button on the front panel. The unit can also be shut off in case of emergency by depressing the red emergency off button (EMO) located on the lower right front of the unit. The EMO button needs to be turned clockwise a quarter turn to allow it to return to the on position.

FIGURE 2.1



2.2 Front Panel

Control and trouble shooting for the entire melt system is accomplished from the melt unit front panel. A brief overview of these controls and indicators are shown on the following pages:



2.2.2 Zone Select and Temperature Setting

Use the “UP” and “DOWN” arrow keys next to the Zone Type indicators to select the desired zone. Use the “on/off” button below the arrow keys to turn the selected zone on or off. (Note: The on/off button turns the melt unit on and off when viewing the Tank zone). The green LEDs indicate the zone type being viewed and the zone display indicates which number zone. The tank and pump only have one zone each while the hose and head zones can have as many as eight each depending on unit configuration.

Temperatures are set using the Data Up and Down keys to the left of the set point display window. See temperature setting example in section 3.15.

The Pump zone is used for setting output pressure. This is set the same way as the temperature settings using the Data Up and Down keys.

2.2.3 Pump Function Selector

These three LED's indicate the pump function modes; OFF, Cycle or Run, and are controlled by the Pump Function Toggle button.

- Off: The tank is not up to temperature so the pump is not allowed to operate.
- Cycle: The pump is cycled on/off when the switch on a handgun or foot switch is activated. The same condition happens when an automatic pattern control device is used.
- Run: The pump is always on. The unit will indicate both cycle and run when the pump has been activated by an external switch.

2.2.4 Standby Mode and 24 Hour Timer

Pressing the Clock key puts the unit into its standby mode. This mode allows the unit to idle at a lower temperature for a set period of time. Standby Time is set using the Data Up and Down keys to adjust the minutes and the Up and Down arrow keys to adjust the hours. After the standby time has expired the unit turns back on and returns to set operating temperature. Use this feature any time the unit will not be in use for extended periods of time like shift changes or lunch breaks.

Press and hold the Clock key to program the 24 hour timer. The timer allows the unit to come on automatically at a given time in the next twenty four hours. Programming is accomplished as follows

- a) Press and hold the Clock key for 3 seconds to set the start time. The "Set Point" display will show the start time and the "Actual" display will show the current time. Use the arrow keys to set the hour and Data keys to set the minutes. When the time is set correctly, press the ON/OFF key to enable. When the timer is enabled the set point display will show blinking decimals indicating the timer is active. Press the Clock key to exit.
- b) Press and hold the Clock key for 5 seconds to set the clock current local time. The "Set Point" will show the time and the "Actual" will say time. Adjust time using arrow and data keys. Press the Clock key to exit.

Note: The timer must be reactivated after every 24 hour cycle. The unit can be turned on and off manually at any time.

2.2.5 Melt Unit Ready Lights (Safety Feature)

When the Melt Unit is ready to operate, all LED indicators as observed on the Zone Status Indicator row of LED's will be green. Note that the pump will not operate until the Tank is at temperature. The tank is at temperature when the associated LED is green. The pump will operate even if the HOSE or HEAD is not at temperature. It is therefore recommended that adhesive only be dispensed after all of the Status LED's have changed from amber to green.

2.2.6 Open Sensor Error LED (Safety Feature)

This LED will be illuminated red in color when an open circuit condition is sensed. It could happen due to a faulty applicator, a melt unit malfunction, or even a hose that has failed. The affected zone is automatically de-energized; the green LED Status indicator for that zone type will indicate red and an error code will be displayed on the Actual display for the affected zone. This provides a very accurate, simple, and fast turn-around time when there is a system problem. For example, if the failure occurred in the HEAD area, a new applicator could easily be installed, and the system would be back up and running.

2.2.7 Temp Error LED (Safety Feature)

This LED will illuminate RED when an over temperature condition is detected in a hose or head. The Status indicator for the zone type will turn Red and an error code will be displayed on the Actual display for the affected zone. (Note: tank over-temp will trip the EMO circuit). The affected zone will be de-energized until the problem is corrected.

2.2.8 Pressure Error (Safety Feature)

The Pressure Error LED will illuminate under two fault conditions. The first fault condition is excessively low pressure where in the pump is not able to produce enough pressure. This can be caused by several things including but limited to running the pump dry, running through an open hose or manifold port, and setting the pressure level above the capabilities of the pump based on viscosity or volume being pumped. The second condition would be excessively high pressure in which case the pump would be turned off. There is no reason this condition should ever occur.

2.2.9 Low Level Indicator (Option)

In units equipped with this option the Low Level indicator will illuminate when the tank level goes below the recommended operating level.

2.2.10 Auxiliary Input Connection

The Auxiliary Input connector on the back of the unit is used to connect to external devices such as a microglue pattern controller. Through this connection the pattern controller can trigger the applicators and regulate out put pressure based on line speed.

2.2.11 Reduction of the “Set” Temperatures

Significant reductions in temperatures can cause the unit to sense an over temperature condition. Large reductions should not be required during typical use but if they are they should be made in incremental stages not larger than 40° F.

2.3 “Cold Temperature” Start-Ups

1. The microglue Melt Unit should not be operated at ambient temperatures below freezing (32 degrees F or 0 degrees C). At very cold temperatures (near 0 degrees C), it is potentially possible for the unit to improperly detect an “open sensor” condition if the selected “SET” temperatures are above 350 degrees F (175 degrees C). This condition will prevent that “open” zone from heating.

Chapter 3

Installation Instructions

3.1 Shipping and Handling

The microglue hot melt system is shipped with the melt unit, supply hoses, and applicator heads disconnected. The supply hoses and applicator heads are typically packed in separate boxes from the melt unit. The melt unit is shipped on a plywood board placed on a foam pad inside a corrugated box. Padding is also placed around the sides and top of the melt unit to protect it during shipment.

A system manual is shipped with each melt unit.

The supply hoses will be loosely coiled in a box separate from the melt unit. Automatic applicator heads will be packed in a box separate from the hoses as well as other system accessories.

EXTREME CARE MUST BE TAKEN WHEN SHIPPING THE MICROGLUE MELT UNIT DUE TO ITS SIZE AND WEIGHT, OTHERWISE IT MAY BECOME DAMAGED. IT IS STRONGLY RECOMMENDED THAT THE ORIGINAL PACKING MATERIALS BE KEPT FOR LATER USE. IT IS ALSO RECOMMENDED THAT THE MELT UNIT BE PLACED ON A PALLET FOR SHIPMENT VIA COMMON CARRIER RATHER THAN SHIPPING VIA PARCEL SERVICES.

3.2 Positioning the Melt Unit

Remove the melt unit from the shipping materials. Position it so servicing is convenient and the control panel is easily accessible. Select a surface that is flat, level and strong enough to support the unit. It is highly recommended that a GMS rolling stand be used.

CAUTION

THE MELT UNIT SHOULD BE PROPERLY BOLTED TO ITS SUPPORTING SURFACE USING THE BASE MOUNTING HOLES TO PREVENT ACCIDENTAL UPSET AND POSSIBLE INJURY.

3.3 Component Installation

WARNING

BE CERTAIN THE MELT UNIT CIRCUIT BREAKER IS TURNED OFF AND THE POWER CORD IS DISCONNECTED PRIOR TO INSTALLING HOSES AND/OR APPLICATOR HEADS TO THE MELT UNIT TO AVOID ACCIDENTAL SYSTEM PRESSURIZATION OR ELECTRICAL SHOCK. READ CHAPTER 2 OF THIS MANUAL BEFORE INSTALLING ANY COMPONENTS.

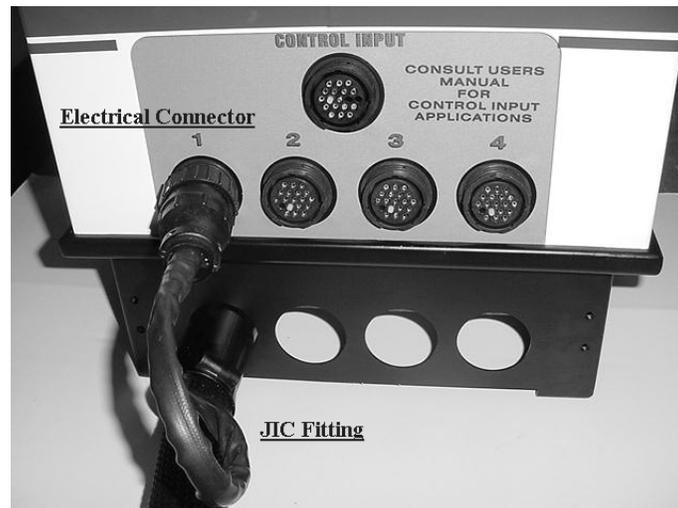
TOOLS USED FOR INSTALLATION

- One 7/16" Open End Wrench
- One 1/2" Open End Wrench
- One 4-mm Hex Wrench
- One 7/64" Hex Wrench

3.4 Hot Melt Supply Hoses

The following points should be kept in mind concerning hot melt supply hoses:

1. The hose should not be flexed when cold to avoid damage. The hoses have a minimum bend radius of eight inches when hot, further flexure will cause permanent damage. New and clean hoses do not need to be heated.
2. Hot melt fittings must be heated before loosening or tightening to prevent damage. New and clean supply hose fittings do not need to be heated.
3. Support the hose during gluing operations to prevent excessive flexure. Failure to properly support the hose will result in premature failure.



DANGER

BE CERTAIN TO WEAR PROPER PROTECTIVE CLOTHING WHEN INSTALLING SUPPLY HOSES TO A MELT UNIT AT HIGH TEMPERATURES TO AVOID POSSIBLE SERIOUS INJURY. EXTREME CARE SHOULD BE EXERCISED AT ALL TIMES.

- a) Loosely connect the JIC swivel fitting on the hose to the manifold fitting, then tighten the JIC swivel fitting using an 9/16" open end wrench. Be certain the JIC fitting is securely seated on the manifold fitting otherwise glue will leak once the unit reaches operating temperature.

- b) Properly align the keys of the hose electrical connector to the melt unit connector and securely screw these parts together.

3.5 Hand Gun Applicators

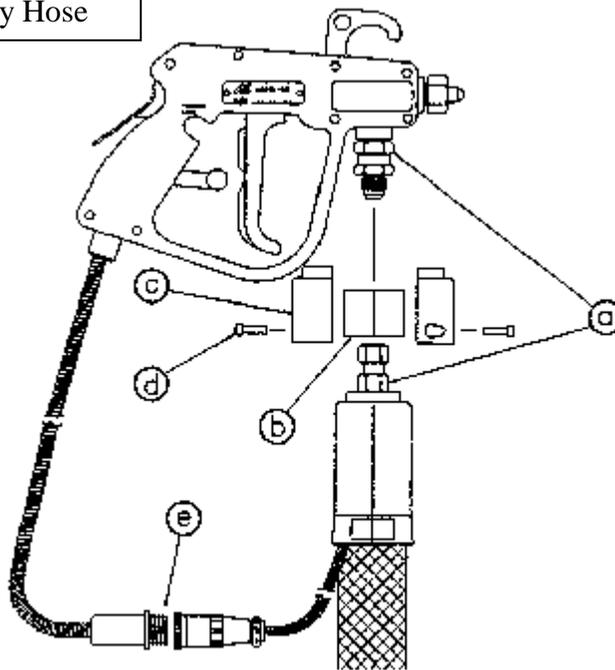
The handgun nozzle should never be pointed towards people when the melt unit is powered. Pressures can develop within the hot melt system causing the glue to be projected significant distances. Pointing the handgun at someone (including yourself!) presents a potential burn hazard.

The trigger mechanism of the handgun should never be pulled until the entire system is up to operating temperature. Attempts to retract the trigger before glue in the handgun has adequately softened will result in damage to the needle assembly. This damage is not covered under warranty.

The backside of the handgun grip contains a yellow lever to control pump motor operation. It is recommended that the front panel of the melt unit be set for cycle operation with pump motor control from the handgun switch. This will prevent unnecessary wear on the motor and pump mechanisms.

Hot melt fittings must be heated before loosening or tightening to prevent damage. New and clean supply hose fittings do not need to be heated.

Figure 3-2 Handgun
Installation to Supply Hose



- a) Loosely connect the JIC fitting on the supply hose to the handgun, then tighten the JIC fitting using two 11/16" open end wrenches, one on the handgun and one on the hose.
- b) Install the heat shield insulation over the handgun/hose connectors.
- c) Assemble the two pieces of the handgun swivel shield over the insulation assuring the top collar of the shield fits into the groove machined in the JIC male handgun fitting.

- d) Insert the two hex head screws into the handgun swivel shield and tighten using a 7/64" hex wrench.
- e) Properly align the keys of the hose electrical connector to the handgun connector and securely screw these parts together.

3.6 Automatic Applicator Heads

The following points should be kept in mind concerning automatic applicator heads:

- Automatic heads are mounted to appropriate brackets using supplied hardware.
- Insulation spacers must be used between the applicator head and the mounting bracket and between the mounting bracket and mounting bolt to assure minimum heat loss and allow the applicator to efficiently reach the desired temperature.
- Fittings connecting the applicator head to the hose should be kept as short as possible and insulation should be applied over the hose/head fitting connections to further minimize heat loss since this connection is unheated.

Hot melt fittings must be heated before loosening or tightening to prevent damage. New and clean supply hose fittings do not need to be heated.

3.7 Electric Applicator Heads

HM-100 electric applicator heads require only electricity to actuate the needle. Both applicator head heating and actuating power is supplied through the melt unit through the supply hose, therefore no external connections are required making installation very simple. This applicator is ideal for installation sites where no compressed air is available. Pattern control is accomplished via the auxiliary connector on the melt unit.

- a) Loosely connect the mounting bolts through the insulation washers and mounting bracket into the applicator head. Tighten the bolts using a 9/64" Allen wrench.
- b) Loosely connect the JIC fitting on the supply hose to the applicator head, then tighten the JIC fitting using an 9/16" open end wrench.
- c) Properly align the keys of the hose electrical connector to the applicator connector and securely screw these parts together.

3.8 Electrical Wiring

The microglue HM25 series hot melt units use single phase, 200 to 240 VAC, 50 to 60 Hz power sources, each with earth ground for safety. Units come with three bare wire leads for connection to an electrical circuit box.

3.9 Supply Hose Electrical Connections

Electrical power to heat supply hoses is provided via the melt unit. Supply hoses are equipped with a multi-pin, molded connector that is attached to the back connector plate of the melt unit for ease of installation.

3.10 Applicator Head Electrical Connections

Electrical power to heat all handgun and automatic applicator heads is supplied by the melt unit via the supply hoses. The applicators are equipped with multi-pin, molded connectors designed to mate to hose connectors for ease of installation.

3.11 Auxiliary Input Connections

The auxiliary input connection is used in systems employing automatic applicators and/or for controlling the pressure via an external controller.

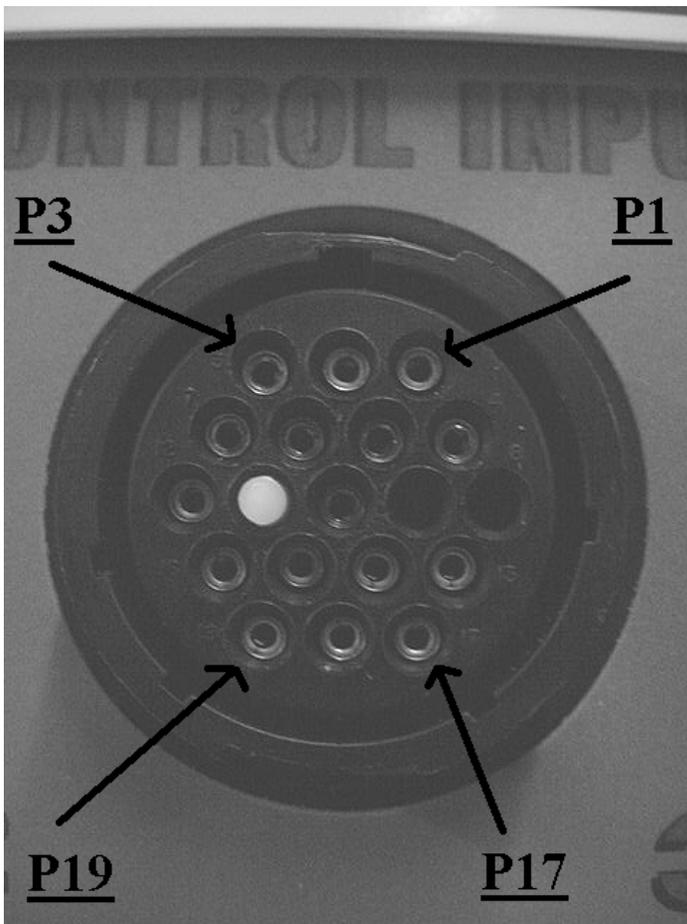


Figure 3-6 Auxiliary Connector Pin Designator

- Pin 1 Auxiliary Pump SW1
- Pin 2 Auxiliary Pump SW2
- Pin 3 Handgun Pump SW1 Hose 1
- Pin 4 Handgun Pump SW1 Hose 2
- Pin 5 Ground
- Pin 6 Handgun Pump SW1 Hose 3
- Pin 7 Handgun Pump SW1 Hose 4
- Pin 8 Neutral L2
- Pin 9 Hot L1
- Pin 10 Ground
- Pin 11 Keyed Pin, No Connection
- Pin 12 Head Control 2, Hose 1
- Pin 13 Head Control 2, Hose 2
- Pin 14 Head Control 1, Hose 2
- Pin 15 Head Control 2, Hose 3
- Pin 16 Head Control 1, Hose 1
- Pin 17 Head Control 2, Hose 4
- Pin 18 Head Control 1, Hose 4
- Pin 19 Head Control 1, Hose 3

Pattern controllers supplied by Gluing Machinery & Systems, Inc. are available with terminated cables to simplify connection to the melt system.

3.12 Start-Up Instructions

WARNING

FIRE, EXPLOSION, PERSONAL INJURY, PROPERTY AND EQUIPMENT DAMAGE CAN RESULT IF THE MATERIALS USED IN OR AROUND ANY HOT MELT SUPPLY EQUIPMENT DO NOT MEET ALL THE FOLLOWING REQUIREMENTS:

- I. Minimum flash point of the material should be at least 50° F (10° C) above the highest operating temperature of the melt system.
- II. Liquid and vapors should be non-toxic and non-flammable at operating temperatures of the melt system.
- III. Any materials mixed in the melt system (i.e. purging compounds and adhesives or different adhesives) should not react violently to produce heat, flames, toxic gases, cross linking or disabling of the adhesive's ability to melt at its designed temperature.
- IV. Materials used in the melt system must not corrode, abrade or otherwise detrimentally affect the system.

1. Become familiar with all melt unit controls by reading Chapter 2 (Controls & Indicators) of this manual.
2. Install the microglue hot melt system as specified in this section.
3. Fill the melt tank with adhesive material to a level no higher than 1.5 inches (4 cm) from the top. Certain product assembly materials will degrade over time due to oxidation. It is best not to put more material in the tank than will be used in one day. Set the tank temperature as low as feasible for each specific application.
4. Turn the melt unit on, selecting the desired temperature setting for the melt tank, supply hose(s), and applicator head(s). Lower temperature settings will increase the material's pot life. The microglue hot melt system employs staged heating upon start-up to reduce current loads and prevent glue degradation in the hose and applicator head as the melt unit achieves its desired temperature. All three elements of the melt system achieve desired temperature at approximately the same time utilizing this method of heating.
5. Select the desired operating mode using the pump function selector. The normal mode of operation is the cycle mode.
6. Select the desired pump output pressure. In most cases this pressure is between 250 and 300 psi.

3.13 Temperature Setting Example

Most manufacturers of hot melt adhesives offer advice for setting the temperatures of the delivery system. The manufacturer's recommended temperature usually applies to the temperature of the applicator. In order to reduce degradation of the adhesive, the delivery hose should be at a lower temperature than the applicator and melting tank at a lower temperature than the delivery hose. When volume requirements vary, the temperature settings for the melting tank and delivery hose may also vary. The applicator will always be set to the recommended delivery temperature; however certain conditions may require adjustment of this setting. For the purpose of this example however, we will assume that conditions are ideal.

In this example, the adhesive will have a recommended delivery temperature of 350° F.

Volume Requirement:	Low	Medium	High
Tank Setting	300	315	325
Hose Setting	340	345	350
Applicator Setting	360	360	360

Chapter 4

Maintenance

All electrical and mechanical components of the microglue hot melt system should be visually inspected for damage/wear prior to powering up the system each day. This inspection should include, but may not be limited to, the following areas event of sub-assembly failures:

- Inspect the melt tank for foreign materials and/or charring of the adhesive. Wipe off all excess adhesives from all surfaces with purging compound.
- Check the hoses, applicator heads, and nozzles for wear and assure integrity of all electrical connections.
- Verify the hose is being properly supported so it is not over-stressed during use. The minimum bend radius is 8 inches (21 cm) when hot.
- Look for leaks under the melt unit and at all mechanical connections.

Problems noted should be remedied prior to powering up the unit. The system should be purged with a flushing agent when char build-up occurs or if the hot melt formulation is changed.

WARNING

HOT MELT MATERIALS CAN CAUSE SEVERE BURNS RESULTING IN DISFIGUREMENT OR BLINDNESS. TAKE THE FOLLOWING PRECAUTIONS BEFORE BEGINNING ANY MAINTENANCE ACTION:

1. Wear eye protection goggles, gloves, and protective clothing.
2. De-pressurize the supply hoses and applicator heads by shutting off the pump motor and firing the applicator head either manually or automatically into a disposal receptacle until no more glue is expelled through the applicator.
3. Allow the melt unit to cool down before beginning any maintenance.
4. Always disconnect hose/applicator electrical connectors before disconnecting mechanical fittings.

CAUTION

The part of the system being serviced should be heated to a temperature high enough to soften the glue prior to dismantling, assembly or adjustment to prevent damage to mechanical components (i.e. hose/head fittings, stroke adjusters, tank lid, etc.).

Assure that power to the melt system is turned off prior to attaching any electrical connector to avoid arcing or possible component failure.

4.1 Tank Screen Inspection

A filter screen is located in the bottom of the melt tank to prevent contaminants from damaging the glue pump assembly. This screen should be inspected and cleaned on a regular basis. It is easiest to do this when the melt tank is at operating temperature and close to being empty of glue.

1. Grasp the screen from the bottom of the melt tank using needle nose pliers. Be very careful not to let any contaminants on the screen fall back into the melt tank.
2. Clean all debris from the screen using purging compound.
3. Inspect the screen for damage and replace if necessary.
4. Reposition the screen into the bottom of the melt tank assuring it fits snugly back into the recess over the top of the sump hole outlet to the gear pump.

4.1.1 Manifold Filter Replacement

The manifold houses a fine particle filter. This filter should be replaced periodically to ensure proper glue flow from pump to manifold. Filter replacement is best done with the unit hot and turned off. Proper caution should

1. Remove filter cap from manifold using a 1" wrench.
2. Unscrew filter element using large flat blade screw driver.
3. Install new filter element
4. Install new O-ring on filter cap and screw filter cap back in place with wrench.

4.2 Hose Replacement

1. Turn off the melt unit circuit breaker and allow the adhesive in the tank to completely solidify.

CAUTION

LIQUIFIED HOT MELT ADHESIVE IN THE MELT UNIT TANK AFFORDS A POTENTIAL BURN HAZARD WHEN ATTEMPTING TO REPLACE SUPPLY HOSES. BE CERTAIN THAT ALL MATERIAL IN THE TANK HAS COOLED BEFORE ATTEMPTING THIS MAINTENANCE ACTION.

2. Turn on the melt unit circuit breaker for several minutes to allow fittings to warm or heat fittings with a hot air gun.
3. Turn off the melt unit circuit breaker and disconnect the melt unit's electrical power.
4. Disconnect the supply hose electrical connector.
5. Loosen the supply hose JIC fitting and remove the hose from the melt unit.
6. Install a new hose as specified in 3.4.

4.3 Opening outer cover

Under normal operating conditions you should never have to remove the outer cover. Should you be asked to do so, the following procedure can be used:

1. Using a Philips screw driver, remove the four screws securing the outer cover to the back panel. These screws are located on the back right and left top and side of the outer cover. Also remove the four screws securing the outer lid.
2. Remove the outer lid, raise the inner tank lid and carefully rotate the cover forward. This will allow access to all higher level electrical components.

Chapter 5

Parts Lists, Assembly Drawings, and Electrical Schematics

This chapter provides parts lists, assembly drawings, and electrical schematics for the various components of the microglue Melt System including the melt unit, supply hose, and applicator heads.

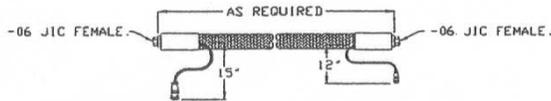
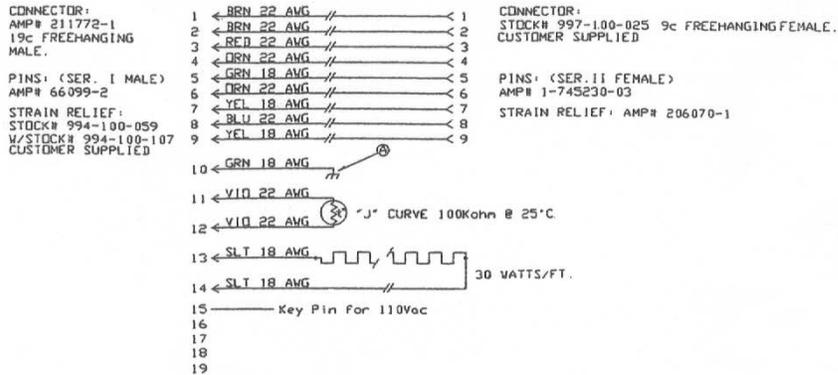
5.1 Tank Filter

Part # HM-52111

5.2 Manifold Filter

Part # HM-52006

5.3 Hose Electrical



NOTE: ALL CONNECTION WIRE IS TO BE HIGH TEMP TEFLON INSULATED.
⊕ GND. TO BRAID OF FLUID HOSE.

5.13 HM100[®] Applicator

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	HM-23000	CORE PIN	1
2	HM-23055	.015" NOZZLE	1
3	HM-23028	VALVE SEAT	1
4	HM-23005	POLE	1
5	HP-23027	POLE O-RING	1
6	HM-23033	SEAT O-RING	1
7	HM-23023	SPRING	1
8	HM-23029	SEAT NUT	1
9	HM-35644	HEATER (INSIDE)	2
10	HM-35647	THERMISTOR (INTERNAL)	1

REBUILDING: BACK OUT SET SCREW HOLDING POLE(4). REPLACE O-RING(5). REMOVE AND REPLACE SEAT(3) SEAT O-RING(6) SPRING(7) AND CORE PIN(1). AFTER 1,3,6 AND 7 ARE BACK IN PLACE REINSTALL 4. SCREW ALL THE WAY DOWN THEN BACK OUT 1/4 TURN. SCREW SET SCREW BACK IN ALL THE WAY UNTIL TIGHT.

<p>PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <INSERT COMPANY NAME HERE>. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <INSERT COMPANY NAME HERE> IS PROHIBITED.</p>	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<p>GMS</p> <p>TITLE:</p> <p>HM100 PARTS LIST</p> <p>SIZE DWG. NO. REV</p> <p>A HM-23500</p> <p>SCALE: 1:1 WEIGHT: SHEET 1 OF 1</p>
	DIMENSIONS ARE IN INCHES		DRAWN		
	TOLERANCES:		CHECKED		
	FRACTIONAL: ±		ENG APPR.		
ANGULAR: MACH ± BEND ±		MFG APPR.			
TWO PLACE DECIMAL ±		Q.A.			
THREE PLACE DECIMAL ±		COMMENTS:			
INTERPRET GEOMETRIC TOLERANCING PER:					
MATERIAL:					
FINISH:					
NEXT ASSY	USED ON				
APPLICATION:					
DO NOT SCALE DRAWING					

Chapter 6

Warranty Policy

Gluing Machinery & Systems, Inc. (GMS[®]) warrants that products manufactured by it shall be free of defects in material and workmanship when operated in accordance with GMS's operating and maintenance procedures for one year following from the date of invoice:

GMS's liability is limited to the repair or replacement, of any product which proves to be defective during the warranty period outlined. The product must be returned, prepaid by purchaser, to GMS after obtaining a Return Authorization Number from GMS. GMS shall have the right of final determination as to the existence and cause of any defects.

This warranty shall not cover unauthorized repairs, alterations, modifications, or use by the purchaser of product for which it is not intended without prior written consent from GMS.

This warranty shall not cover abuse, neglect, improper operating or maintenance procedures, voluntary or involuntary damages of the product by the purchaser.

GMS's liability under this warranty shall in no event exceed the purchase order price and shall not cover any losses caused by delays or for any expenses for labor, supplies, machine rental or loss or damages to other property.

No warranty is made with respect to customer equipment or products manufactured to purchaser's specifications except as specifically stated in writing by GMS.

GMS assumes no responsibility for the quality or performance of coatings, adhesives, or other customer supplied materials used with GMS's equipment.

GMS's responsibility for transportation under this warranty is limited to charges for delivery of repaired products via the least expensive transportation available, to the purchaser in the Continental United States only. Alternative methods of shipping will be prepaid for solely by the customer. Payment for shipment of GMS parts or products to GMS's facilities is the responsibility of the purchaser.

Warranty for items that are repaired or replaced by GMS shall continue in effect for the remainder of the original warranty period or for ninety (90) days following the date of shipment by GMS, whichever period is longer.

This warranty supersedes any other warranty, expressed or implied, and constitutes all of Gluing Machinery & Systems, Inc.'s liability with respect to its products.

This warranty is non-transferable.

Safety Precautions for Hot Melt Applicator Equipment

This manual contains important safety information and instructions. Failure to comply with the following procedures could result in death, injury, or permanent damage to this equipment and will void the warranty.

Intended Use

This equipment is designed for use with standard adhesive and sealant such as EVA's and PVA's with flash points above 232° C (450° F). It is not designed for use with polyamides. Do not use flammable material or material not compatible with the specifications of this equipment. Failure to follow this instruction can cause injury to operators and damage to equipment.

Gluing Machinery & Systems, Inc., has designed this equipment for safe operation. However, heated thermoplastics and other hot melt materials are dangerous and care must be exercised to ensure operational safety. Handling must be in accordance with hot melt manufacturer specifications.

Do not mix hot melt formulations in the melt tank. To change formulations, purge and clean tank with materials recommended by the adhesive manufacturer at the recommended temperature.

Dispose of hot melt properly. Refer to the Materials Safety Data Sheet (MSDS) of the hot melt for recommended disposal methods.

Personal Safety

Wear the following protection when working on or around this equipment:

Always wear heat resistant gloves rated to 205° C (400° F). Then using heat resistant gloves, allow all system temperatures to stabilize at 193° C (380° F) or below before attempting operation or maintenance.

Properly ventilate equipment according to appropriate MSDS of the hot melt material used.

Do not store combustible materials in the vicinity of equipment.

Trained operators may perform only external equipment adjustments. Trained maintenance technicians must perform internal adjustments and service.

Emergency Power Disconnect

In the event of a malfunction, turn off power to the equipment at the main circuit breaker of the melt unit and remove source power to the unit at the nearest main disconnect.

Follow Directions

Read the equipment manual thoroughly before installation, operation or maintenance.

Gluing Machinery & Systems, Inc. will not be held liable for injuries or damages caused by misuse of this equipment.

Safety Labels and Signal Words

The following safety words are used throughout this manual and in product labels to alert the reader and operator to personal safety hazards or to identify conditions that may result in equipment or property damage.

DANGER

Indicates a hazard which, if not avoided, will result in serious injury, including death, or equipment and property damage.

WARNING

Indicates a hazard which, if not avoided, can result in serious injury, or equipment and property damage.

CAUTION

Indicates a hazard which, if not avoided, can result in minor injury, or equipment and property damage.