Glue Pro 2
Owner’s Manual

(2 channels, 2 events per channel 4 outputs per channel)
Welcome:

Thank you for purchasing your Glue Machinery Corporation™ Glue Pro 2 control system and welcome to the next level in gluing technology. Glue Pro 2 is a high-speed, precision glue control system that offers greater productivity and reduced waste through ease of setup, improved process control, and reduced maintenance.

This manual is split into several headings. All parts of the manual are important for a thorough knowledge of the system and to insure you receive the greatest benefits. Different jobs may require moving the glue valves, opto sensor, encoder, or other components. It is strongly recommended that you read the installation section of this manual fully to become familiar with any requirements of all the components used during a job set up.

To insure that Glue Pro 2 is a safe and productive addition to your operation for many years to come, please be sure to mount all components where they will not become entangled in moving parts of the machine. It is very important that rollers, gears, and other moving parts be properly guarded. Under no circumstances should Glue Pro 2 be used on an improperly guarded machine or under other unsafe conditions.

The high performance glue applicator heads that have been provided with your system will function more efficiently if a few simple rules are observed—

- Never operate an applicator head dry.
- Use the manual purge button to prime the system before running a job.
- **Clean, clean, clean** all parts (heads, hoses, etc.) on a regular basis, preferably after each job.
- Insure that the glue is within its shelf life and is maintained at its correct temperature rating.
- Avoid coagulation and downtime—do not cross contaminate glues when changing types.

There is no “universal” glue suitable for every application. Your application may require some experimentation. All glues are affected by temperature changes, have limited shelf lives. It is important to work with your local supplier to insure that your glue is not only fresh but that it also correctly matches the application to achieve the desired results. Cold affects glue viscosity dramatically. Cold glue will not flow through the hoses and valves correctly. Maintain temperatures. If necessary, wrap the glue tank with a heating blanket.
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Glue Pro 2 is a full featured controller for dispensing glue and performing other distance based operations. The basic unit consists of a display unit, which prompts the user through the operating procedures. When the computer is first switched on it displays the software version, then enters the auxiliary mode. **Glue Pro 2** is then ready for programming or operation.

The controller has 2 channels each with 2 events and there are 4 outputs per channel. Each channel can be programmed for two specific events such as a dot, stitch, or line gluing. **Glue Pro 2** makes use of an encoder and equations to provide automatic speed compensation during operation.

Notes:

1. Glue will squeeze outwards as the product is folded. To avoid getting glue on the machine during initial make ready, program the glue for the center of the desired area, increasing it to extend toward the edges of the contact area gradually as product is run. Note that this squeeze distorts the start and stop locations, which furthers the need to start with less glue and grow the pattern.

2. The encoder will increase count in both directions. Measure the opto lead with a ruler and use the arrow keys to program the value when applicable.

3. In cases where the opto must be mounted behind the glue valve (such as stream feeders, or commercial folders) feed the paper until the leading edge is directly under the optical sensor and measure the distance from where glue should be applied to the nozzle of the applicator valves. Use this distance as the start value and set the opto lead to zero.

4. The actual start location of the glue is the total of the opto lead and the start at values. A program with 1 inch and 3 inches for these respective values will perform the same as a program with 2 inches and 2 inches.

5. If a stitch on or stitch off is programmed too small and or the speed is high, **Glue Pro 2** will automatically switch to time based operation to insure that glue and gaps occur. This may cause the actual lengths to vary from those programmed.

6. For simplicity, examples in this manual assume inches have been selected for the units.
**CHANNEL KEYS**
Push these keys to enable or disable each Channel.

**CHANNEL STATUS LED’S**
To indicate Channel status.
A = Active, ~ = Enabled, O = Off.

**OPTO LED’S**
To indicate when the Optical Sensors see the product.

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**MODE LED’S**
Indicates mode.

**PUMP ON LED**
Indicates Adhesive application and controls.

**SHUTTER OPEN LED**
Indicates Glue Pro 2 is in operation.

**DATA UP / DOWN KEY**
To scroll options.

**YES / NO KEY**
To clear data or answer questions available in each mod.

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**DISPLAY CONSOLE FRONT**

- **Channel Keys**: Push these keys to enable or disable each Channel.
- **Channel Status LED’s**: To indicate Channel status. A = Active, ~ = Enabled, O = Off.
- **Opto LED’s**: To indicate when the Optical Sensors see the product.
- **640 x 128 LCD Display**
- **Data Up Key**
- **Data Down Key**
- **Mode Key**: To toggle operating mode.
- **YES Key**: To enter data or answer questions.
- **Page Up / Down Key**: To scroll options.
- **NO Key**: To clear data or answer questions available in each mod.

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**Glue Pro 2**
Adhesive application and controls.
Channel 1 outputs
12VDC or 24 VDC

Channel 2 outputs
12VDC or 24 VDC

Encoder inputs
Encoders 1 & 2

Control outputs
Glue valve shutter
Pump & Batch Kicker

Optical Sensor Inputs
Optical Sensors, 1 - 4

Proportional control output
0-10 VDC based on speed
Key Stroke Functions

Yes key is used to answer direct questions identified by a “?”.

No key is used to answer direct questions identified by a “?”.

Mode key is used to switch between the 4 channel and the Auxiliary and counter modes.

Page Up key allows you to scroll up through each screen available within each mode.

Page Down key allow you to scroll down through screens available within each mode.

Line up key moves the cursor (highlighted line) up one line within the screen being viewed.

Line Down key moves the cursor (highlighted line) down on line within the screen being viewed.

Data up key allows you to increase the value of the data on the line highlighted.

Data Down key allows you to decrease the value of the data on the line highlighted.

Pressing the 1 key enables or turns off the outputs for channel one.

Pressing the 2 key enables or turns off the outputs for channel two.

SET UP ROUTINE

All Glue Pro 2 controllers are programmed in English and inches when shipped from the factory. It is only
necessary to enter this routine if changes to either language, units of measure or purge frequency are required. Once this routine is entered, it must be completed prior to operation. After power on, press the **Mode** key while **Glue Pro 2** displays the software version. **Glue Pro 2** will prompt the following questions:

**SET UP ROUTINE**
**CHOOSE LANGUAGES AVAILABLE FOR USE.**

Press the **YES** or **NO** keys to accept or change which languages the system will display. Press **YES** if the English language will be used, **NO** if not.

Continue with this procedure for all offered languages. If no languages are selected, the cycle will start again. If more than one language was selected, you will be asked to choose a language to continue.

The next step after the language selection process is choosing which unit of measure you wish to use.

**SET UP ROUTINE**
**CHOOSE A UNIT OF MEASURE.**

**UNITS = IN ?**

Press the **YES** or **NO** keys to accept or change which units the system will display. Press **YES** if inches will be used, **NO** if not.

Additional choices are millimeters or centimeters. If no unit of measurement has been selected, **Glue Pro 2** will cycle through the choices again. **Glue Pro 2 does it's internal calculation in inches, consequently when Glue Pro 2 is operating in metric, some least significant digit values will be skipped because of the math round off.**

The next step after unit selection is to set the encoder pitch.

**SET UP ROUTINE**
**ENCODER PITCH.**
**THE ENCODER PRODUCES 100 PULSES / INCH OF MACHINE TRAVEL**

Use the **Up** or **Down** keys to adjust the number of encoder pulses per inch of machine travel. Because **Glue Pro 2** does all its calculations in inches this must be set to equal the number of encoder pulses per inch of machine travel. The **Glue Pro 2** encoder produces 600 pulses per revolution and the friction wheel is 6 inches in circumference. The value entered here depends on the actual encoder used and what part of the machine the encoder is mounted. If the standard **GLUE MACHINERY CORPORATION™** encoder is used and it is applied to a belt or roller that is moving at the same speed as the product then the pulses per inch should be set to 100.

The next step after setting the encoder pitch is to set the purging on/off cycle rate.

**SET UP ROUTINE**
**PURGE FREQUENCY IS 100 Hz**

Use the **Up** or **Down** keys to adjust the rate that the valve is cycled on and off when purging. Select 100, 75, 50 or 25Hz. 25Hz recommended.
The Setup Routine is now complete. **Glue Pro 2** will automatically enter the Auxiliary mode.
When **Glue Pro 2** is switched on, the display shows the software date, asks which language to use if more than one language had been selected in the set up routine, and then enters the auxiliary mode. The auxiliary mode screen displays the production rate in pieces/hour and machine speed in ft/min. The **MODE** key is used to switch between modes of operation. LED’s indicate which mode is displayed. The **MODE** key will allow you access each mode so that the information in each mode may be viewed or edited.

The production rate is displayed in increments of 1000 pieces/hr. The machine speed is displayed either in, feet/minute or meters/minute. The **↑** or **↓** key will toggle through each screen available in the **AUXILIARY MODE**. Use the **↑** or **↓** keys to the left of the display to position the cursor and select the line to edit. Use the **↑** or **↓** keys to the right of the display to edit the data on the line selected.

Refer to the **AUXILIARY MODE** section of this manual for detailed instruction for each screen available in the **AUXILIARY MODE**.

Use the **MODE** key to toggle to **CHANNEL ONE MODE**.

The **↑** or **↓** keys will toggle through each screen available in the **CHANNEL ONE MODE**. Use the **↑** or **↓** keys to the left of the display to position the cursor and select the line to edit. Use the **↑** or **↓** keys to the right of the display to edit the data on the line selected. Refer to the CHANNEL OPERATION section of the manual for detailed instructions for each screen available in the **CHANNEL ONE MODE**.

Use the **MODE** key to toggle to **CHANNEL TWO MODE**.
Use the \( \uparrow \) or \( \downarrow \) keys to adjust where the glue will start.

Use the \( \uparrow \) or \( \downarrow \) keys to adjust the length of glue pattern.

Use the \( \uparrow \) or \( \downarrow \) keys to adjust the length of the stitch on.

Use the \( \uparrow \) or \( \downarrow \) keys to adjust the length of the stitch off.

The \( \uparrow \) or \( \downarrow \) keys will toggle through each screen available in the \textit{CHANNEL TWO MODE}. Use the \( \uparrow \) or \( \downarrow \) keys to the left of the display to position the cursor and select the line to edit. Use the \( \uparrow \) or \( \downarrow \) keys to the right of the display to edit the data on the line selected. Refer to the CHANNEL OPERATION section of the manual for detailed instructions for each screen available in the \textit{CHANNEL TWO MODE}.

Use the \( \text{MODE} \) key to toggle to \textit{COUNTER MODE}.

Product count increments by one each time the opto is tripped.

Batch count increments by one every time the batch reset value is exceeded. The \( \uparrow \) or \( \downarrow \) key will toggle through each screen available in the \textit{COUNTER MODE}. Use the \( \uparrow \) or \( \downarrow \) keys to the left of the display to position the cursor and select the line to edit. Use the \( \uparrow \) or \( \downarrow \) keys to the right of the display to edit the data on the line selected. In this screen only the batch size and batch kick can be edited.

Refer to the \textit{COUNTER MODE} section of this manual for detailed instruction for each screen available in the \textit{COUNTER MODE}.

The \( \text{MODE} \) key will cycle back to \textit{AUXILIARY MODE}.

\[ \begin{array}{l}
\text{CHANNEL 2} \\
\text{1A START AT } \ 5.00 \\
\text{1A RUN FOR } \ 10.00 \\
\text{1A STITCH ON } \ .25 \\
\text{1A STITCH OFF } \ 1.00 \\
\text{INCHES}
\end{array} \]
**AUXILIARY MODE OPERATION**

The *AUXILIARY MODE* screen display the machine speed in feet/min or meters/min and production rate in pieces/hour, Product length setting set in inches or metric, Output cutoff speed set in ft/min or meters/min, Proportional control settings and the Open shutter / Purge option. Use the ▲ or ▼ key to scroll to each screen. The screens will rap around to get back to the top or take a short cut to get to the last screen.

<table>
<thead>
<tr>
<th>AUXILIARY MODE</th>
<th>PRODUCTION RATE IS</th>
<th>0 PIECES /HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED A</td>
<td>0 FT/M</td>
<td></td>
</tr>
<tr>
<td>SPEED B</td>
<td>0 FT/M</td>
<td></td>
</tr>
</tbody>
</table>

The production rate is displayed in increments of 1000 pieces/hr. The machine speed is displayed either in, feet/minute or meters/minute. The ▲ or ▼ key will toggle through each screen available in the *AUXILIARY MODE*. Use the ↑ or ↓ keys to the left of the display to position the cursor and select the line to edit. Use the ▲ or ▼ keys to the right of the display to edit the data on the line selected. Since the values in this screen are related to measured data the ▲ or ▼ keys to the right of the display will not have any affect.

Use the ▼ key to scroll down to the next option.

**Glue Pro 2** will prompt the following:

<table>
<thead>
<tr>
<th>AUXILIARY MODE</th>
<th>OUTPUT CUTOFF SPEED:</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 FT/M</td>
<td></td>
</tr>
</tbody>
</table>

Press the ▲ or ▼ keys to the right of the display to edit the Output cutoff speed.

The cutoff speed is the minimum speed the machine may run before **Glue Pro 2** disables the outputs, preventing puddles as the machine is coming to a stop. Enter a cutoff speed that is greater than your jog speed but less than your minimum run speed. Cutoff speed is one of two prerequisites that are used to determine if the glue valve shutters or pump control signals are set.

Use the ▼ key to scroll down to the next option.
**Glue Pro 2** will prompt the following:

The green shutter and pump LED’s will light and **Glue Pro 2** will open the shutter mechanisms and or turn on the hot melt pump. This allows purging for GLUE MACHINERY CORPORATION™ valves with shutters or GLUE MACHINERY CORPORATION™ hot glue guns. In addition to using the purge buttons on the glue applicator valves you can press and hold the key and the output keys you wish to purge.

**Glue Pro 2** automatically opens the shutters and turn on the hot glue pump during operation when:

1. Machine speed is greater than the MINIMUM SPEED setting and . . .
2. At least one output has been enabled.

Press to continue after purging is completed. The shutters will close and the hot glue pump will stop. The Purge buttons will only operate while at this screen.

Use the key to scroll down to the next option. **Glue Pro 2** will prompt the following:

This screen allows you to configure the proportional control settings. The proportional control is the controller’s ability to raise or lower the pressure at which adhesive is applied at varied speeds.

**AUXILIARY MODE**

**SHUTTERS OPEN**

**AND PUMP ENABLED**

**PURGING ALLOWED**

**WHEN AT THIS SCREEN!**

AUXILIARY MODE

PROPORTIONAL CONTROL

MIN SPEED 300 F/M
MIN PRESS 30 PSI
MAX SPEED 1000 F/M
MAX PRESS 100 PSI

Use the or keys to adjust the min. speed for glue pressure.
Use the or keys to adjust the min. pressure of the glue.
Use the or keys to adjust the max. speed for glue pressure.
Use the or keys to adjust the max. pressure of the glue.

The or key will toggle through each screen available in the **AUXILIARY MODE**. Use the or keys to the left of the display to position the cursor and select the line to edit. Use the or keys to the right of the display to edit the data on the line selected.

Example:
Set minimum speed for 0 ft/min
Set the minimum pressure for 10 psi
Set the maximum speed for 500 ft/min
Set the maximum pressure for 60 psi
The pressure will be at 10 psi while the machine is not running and rise at a rate of 10 psi for every 100 ft/min that the machine increases in speed. The pressure at 300 ft/min will be 40 psi
Glue Pro 2 is equipped with a product and batch counter. To view the product and batch counter values press the MODE key until the counter LED is lit. The display will show the current product count and number of batches completed. The product and batch counter may be used independently of the gluing system.

The maximum product count is 99,999,999. The product counter will increment by one each time the optical sensor is tripped, provided that the product length has been exceeded each time the optical sensor is tripped.

The maximum number of batches is 99,999.

The product counter increments by one each time the optical sensor is tripped, up to 10,000,000.

The batch counter increments each time the amount of product fed through the equipment exceeds the designated reset value, up to 10,000.

It is very important to set the counter product length to the actual length of the product that is passing under the optical sensor. This will ensure that the counter correctly tracks the actual number of products as opposed to the number of times the optical sensor is tripped.

Use the \( \uparrow \) or \( \downarrow \) keys located under the display to toggle through each screen available in the COUNTER MODE.

Use the \( \uparrow \) or \( \downarrow \) keys to the left of the display to position the cursor and select the line to edit.

Use the \( \uparrow \) or \( \downarrow \) keys to the right of the display to edit the data on the line selected.

To zero the product count or batch count, press the \( \Rightarrow \) key while in the COUNTER MODE.

Glue Pro 2 will prompt the following questions:

Press the \( \Rightarrow \) key to zero the product counter. Press \( \Rightarrow \) to leave the value alone.
Glue Pro 2 will not ask if you want to zero the product counter if the product count is already zero.

Press \( \text{\textdagg} \) to go to the next option.

Press the \( \text{\textdagg} \) key to zero the batch counter. Press the \( \text{\textdagger} \) key to leave the counter alone.

Glue Pro 2 will not ask if you want to zero the batch counter if the batch count is already zero.

If the kicker time is set to a value greater than zero, the kicker will operate for the programmed duration after each batch is completed. The kicker output may be wired into a device that mechanically stalls the feeder or speeds up the delivery system.

The product and batch counters are now ready for operation. Press \( \text{\textdagg} \) to return the first screen.
**CHANNEL OPERATION**

To program the **Glue Pro 2** channels, press the **MODE** key until the desired Channel is displayed. Note: the LED for that channel adjacent to the **MODE** key will be illuminated. **Glue Pro 2** will prompt the following display:

Use the ▲ or ▼ keys to adjust where the glue will start.  
Use the ▲ or ▼ keys to adjust the length of the glue pattern.  
Use the ▲ or ▼ keys to adjust the length of the stitch on.  
Use the ▲ or ▼ keys to adjust the length of the stitch off.

The ▲ or ▼ key will toggle through each screen available in the **CHANNEL MODE**. Use the ↑ or ↓ keys to the left of the display to position the cursor and select the line to edit. Use the ▲ or ▼ keys to the right of the display to edit the data on the line selected.

Hold the arrow keys down continuously to make large adjustments for the glue starting position, run length, stitch on or stitch off; for small changes a tapping technique works well.

**Note that when the “Stitch off” value is zero, there is no stitching and the glue line will run continuously.**

The **Glue Pro 2** allows each channel to be programmed to produce two separate events, each event can be either a dot line or stitch pattern.

If a second event is not needed, simply set the run value to zero.
Press the 1, 2, 3 or 4 keys to enable each channel for operation.

Notice the yellow “Enable” LED illuminates when a channel is enabled. The green “Active” LED will illuminate when the channel turns on the gluing device. The red “off” LED is illuminated while the channel is not in use.

**Glue Pro 2** allows each channel to be triggered by any of the four optical sensor inputs 1, 2, 3, or 4. To select the optical sensor input to trigger each channel, Press 7 key while the channel to be modified is displayed. **Glue Pro 2** will prompt the following display:

![CHANNEL 1](image)

Use the ▲ or ▼ keys to the right of the display to select an optical sensor as a trigger.

You can select from either optical sensor number 1, 2 3 or 4.

The opto lead distance, encoder input and on and off compensation times must be entered correctly for the output to be programmed accurately and remain accurate throughout a range of speeds. To edit the compensation times and optical lead distance, press the ▼ key while the channel to be modified is displayed.

The opto to head distance is the distance the product travels from the opto to the nozzle of the glue valve. Do not assume that the **Glue Pro 2** sees the product directly under the optical sensor as distance and angle may vary the trip point. Use the opto LED on the **Glue Pro 2** display to mark the trip point and measure the products forward travel from there to the nozzle of the glue valve. Entering an accurate opto lead distance is critical for **Glue Pro 2** 228’s operating procedure. When done properly the “start at” and “run for” value will be exact in relation to the leading edge or reference position of the product, making programming simple. **Glue Pro 2** will prompt the following display:

![CHANNEL 1](image)

Use the ▲ or ▼ keys to the right of the display to edit the opto lead distance. The opto lead is the physical distance between the optical sensor and the glue gun nozzle. **If the optical sensor is positioned behind the glue gun nozzle that distance will need to be subtracted from the start value programmed to get accurate glue line/ dot placement.**

Press the ▼ and Glue Pro 2 will prompt:

![CHANNEL 1](image)

Press the ▲ or ▼ keys to the right of the display to edit the product length. The product length should be set to equal the length of the actual product traveling under the optical sensor selected for the channel being programmed.
If **Glue Pro 2** knows the length of the product, it will lock out and not permit false opto triggers on product with windows or printing. If the product length is set too long **Glue Pro 2** may ignore the next product, leaving every other product unglued. Always remember to use the product length optical sensor lockout feature to protect against opto mis-triggers on products with printing or cutouts.

Use the key to scroll down to the next option. **Glue Pro 2** will prompt the following:

Glue Pro 2 allows each channel to track the position of the product with either encoder input 1 or encoder input 2. To select the encoder input for each channel, Press key while the channel to be modified is displayed. **Glue Pro 2** will prompt the following display:

Use the or keys to select the desired encoder input. You can select from either encoder input 1, or 2.

Press to modify the on and off compensation times.

**Glue Pro 2** will prompt the following display:

The compensation times of a glue valve may vary over the life of the valve and with the use of different glues and pressures. Compensation allows the controller to maintain accurate position and length of the glue line through the range of operating speeds.

**Compensation adjustments**

If the start position moves toward the tail of the sheet as speed increases, the on compensation time needs to be increased. If the start position moves forward as speed increases, the on compensation time needs to be decreased. If the length of the glue line increases with speed, increase the off compensation time, if the glue line decreases in length as speed is increased lower the off compensation time.
COLD GLUE SYSTEMS

The high volume cold glue delivery unit shown here is used where an uninterrupted flow of glue over long periods of time is required. Two tanks for glue are supplied with automatic tank switchover. Glue tanks can be refilled without affecting production. Level indicators are visible from a distance and an alarm activates if both tanks go low. A proportional control valve can be implemented for automatic pressure adjustment based upon machine speed.

GLUE MACHINERY CORPORATION™ also offers 2 and 5 gallon tank style delivery systems that consist of the same stainless steel canister style tanks.

In addition to the high volume and tank style delivery systems GLUE MACHINERY CORPORATION™ offers several different dual diaphragm pump style delivery systems. The pump systems are available with Proportional pressure control and or automatic water switch over systems.

All tanks are assembled with quick release fittings, input pressure regulator, output shut off valve, filter, and flexible tubing. Properly maintained they will give years of trouble free service.

GLUE MACHINERY CORPORATION™ also supplies a variety of manifolds for glue delivery to multiple valves. Please contact GLUE MACHINERY CORPORATION™ for further details.

House air is required to supply pressure into the tank to push the glue through the delivery lines. Filters insure that heads do not become plugged with contaminants. The filter screen should be smaller than the smallest orifice in the head nozzles. It should also be larger than the filter the manufacturer used to prepare the glue (refer to specification sheets). Adjust the air regulator to adjust the glue pressure. If there is a problem with glue delivery, refer to the basic troubleshooting section later in this manual. Please note—

- Pour water or adhesives directly into the tank.
- Flush adhesives out with warm water, or warm water and ammonia.
- Only use adhesives that are listed in the GLUE section of this manual (or equivalents).
- Never mix glues, they may react and cause problems.
- Keep the filter clean.
- Stir glues thoroughly before using.
- Be certain that the air supply to the delivery system is able to provide at least 80 psi @ 1cfm.
- The air supply must be filtered for both water and oil.
- Glues used below their rated temperature may need to be thinned. A twenty-degree Fahrenheit reduction in temperature doubles the viscosity of most glues.
- Tank heaters are available and are recommended for areas where temperatures are consistently below sixty degrees Fahrenheit. Never allow glue to freeze.
- Keep pressure in the tanks when not in use to minimize skinnning of the exposed glue surface.
- Water based glues can use the standard O-ring seal on the pressure tank.

METHODS OF PIPING THE COLD GLUE TO THE HEADS
Straight connection. Remove glue from tank and replacing it with water (solvent) for cleaning.

Valves to allow direct flushing of each head. To clean the lines (should be done regularly and ANY time that the glue type is changed) remove the delivery line quick disconnect assembly at the glue tank and move it to the water (solvent) tank.
COLD GLUE APPLICATOR VALVES

GLUE MACHINERY CORPORATION™ offers different glue valves for different applications. The GLUE MACHINERY CORPORATION™ LP valves work best with low viscosity or low solid content glue. They will fit in tight locations such as between fold plates. Optional equipment includes a shutter mechanism. This requires that a 1/8 inch pneumatic control line be attached from the small barbed fitting on the stainless steel block assembly to a control valve wired to the controller.

The Glue Pro 2 LP valve uses two forms of purging (an electrical switch and a manual purge button), both located on the front of the applicator valve. The electrical switch purges the valve mechanism at a frequency controlled by the Glue Pro 2 controller. The manual purge switch may be used to purge the valve even if the cable is removed. Use only the manual switch when priming the lines.

OPERATING INSTRUCTIONS

1. Connect the cable to the valve’s electrical connector making sure that the key positions line up.
2. Insert ¼” tubing into press-lok fluid fitting. Be sure the end of tube is cleanly and evenly cut.
3. Adjust the tank pressure to the glue valve to 20-35psi or 2-4 bars.
4. Press the manual purge button to introduce glue into the valve.
5. Press the electric purge switch on glue valve to verify operation. The valve should turn on and off at the frequency programmed (see SETUP).

Caution—Use only adhesives that are identified to work properly with the system. Other adhesives may not flow, could damage the glue valve or delivery system, or may compromise the integrity of the paper bond. Clean the glue head after every use and seal the orifice with petroleum jelly. Remove nozzle with ¼" nut driver and flush with water to clear obstructions. Glue valves with shutters require the removal of the shutter mechanism to access the nozzle. Never operate glue valve without fluid.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Current</td>
<td>380 ma</td>
</tr>
<tr>
<td>Power dissipation</td>
<td>4.56 W</td>
</tr>
<tr>
<td>On compensation time</td>
<td>2.50 – 3.75ms</td>
</tr>
<tr>
<td>Off compensation time</td>
<td>2.00 – 2.5ms</td>
</tr>
<tr>
<td>Maximum stitch speed</td>
<td>150 Hz</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice

Shown: glue valve with shutter mechanism.
The higher profile GLUE MACHINERY CORPORATION™® HP applicator offers high performance with the ability to run higher viscosity glues. This valve uses electrical purge only. The switch is located on the top of the applicator valve. The electrical switch purges the valve mechanism at a frequency controlled by the Glue Pro 2 controller. The HP also has stroke adjustment for volume regulation.

OPERATING INSTRUCTIONS

1. Connect the cable to the valve’s electrical connector making sure that the key positions line up.
2. Connect the ¼” tubing to the quick release coupling barb fitting.
3. Adjust the tank pressure to the glue valve to 30-90 lb or 2-6 bars.
4. Adjust the stroke by rotating the valve plug clockwise until it stops then backing off 1/4 turn. This is the recommended starting position.
5. Thoroughly flush the system with water or appropriate solvent for extended down times.
6. For full system flushing it is recommended that the nozzle on the tip of the gun be loosened to allow continuous free flow of the glue.
7. Be sure the valve is clean and free of glue when not pressurized or when removed from the machine.
8. Apply petroleum jelly to tip of nozzle for short down periods to prevent clogging.

Caution—Use only adhesives that are identified to work properly with the system. Other adhesives may not flow, could damage the glue valve or delivery system, or may compromise the integrity of the paper bond. Clean the glue head after every use and seal the orifice with petroleum jelly. Remove nozzle with ¼" nut driver and flush with water to clear obstructions. Never operate glue valve without fluid.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Current</td>
<td>660ma</td>
</tr>
<tr>
<td>Power dissipation</td>
<td>7.92 W</td>
</tr>
<tr>
<td>On compensation time</td>
<td>2.50 – 4.0ms</td>
</tr>
<tr>
<td>Off compensation time</td>
<td>1.75 – 2.5ms</td>
</tr>
<tr>
<td>Maximum frequency</td>
<td>500 Hz</td>
</tr>
<tr>
<td>Maximum duty cycle</td>
<td>100%</td>
</tr>
<tr>
<td>Viscosity range</td>
<td>1000 cps at 50% solids</td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>125 psi, 8.77Kg/cm, 4.13 bar</td>
</tr>
</tbody>
</table>

Shown: HP Glue Valve

The glue valves supplied with your Glue Pro 2 system are precision devices and must be treated with care. Failure to clean the valves may result in damage requiring replacement of parts.

All of the above valves mount on brackets designed to fit into a cutout toward the rear of the valve. There are several different types of mounting brackets and depending on the application, different brackets may be used. The mounting bracket can then be attached to the clamping bracket on the cross bar. The applicator valve is connected with the supplied cable. Carefully align the keyed connector housings and insert the connector onto the applicator valve. The cable can be removed by pulling back on the collar, then sliding the connector off. Plug the other end of the cable into any output connector on the Glue Pro 2 controller.
**HP VALVE EXPLODED VIEW**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>HP-29205</td>
<td>INSERT 30° RING (FB VITON)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>HP-27084</td>
<td>GLUE VALVE PLUG</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>HP-20022</td>
<td>PLUG 10° RING (F11 VITON)</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>HP-20025</td>
<td>VALVE SPRING</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>HP-25000</td>
<td>SOLENOID CORE</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>GW-25112</td>
<td>O-RING 0.007 5.5</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>HP-25113</td>
<td>LOCK PLATE</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>HW-29110</td>
<td>NOZZLE 0.5&quot; RING (2060, 240 VITON)</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>HW-29055</td>
<td>.015 NOZZLE</td>
</tr>
</tbody>
</table>

Stroke adjustment is accomplished by rotating the valve plug (2). As a starting position, rotate the plug clockwise until it stops then back it off 1/4 turn. Be careful not to force the plug past finger tight when rotating clockwise.

The valve can be disassembled for cleaning by removing the two Philips screws (6) holding down the lock plate (7) and unscrewing the valve plug (2) all the way. The lock plate should always be re-installed before valve is returned to use. Removing the nozzle (9) is recommended for cleaning and for system flushing. Use a 1/4" wrench for nozzle removal.
All hot melt systems consist of a heating tank with pump, heated hoses, and a special applicator valve. Tanks are available for up to 1, 2 or 4 applicator valves. A hopper extension is available to store extra glue for long run job requirements. Different hose lengths are available for different machine configurations. The applicator valve is the same for all applications. There are three temperature zones that must be set when using hot melt glue—

1. Tank—set to melt the glue so that it can be pumped. This is the lowest of the three temperatures.
2. Hose—set to allow the glue to approach the applicator valve. Generally this is set a bit higher than the tank.
3. Applicator valve—the highest of the three settings so that the glue is the flows freely with minimal trailing off.
4. Glue pressure can be adjusted by turning the hex wrench screw on the side of the melt unit.
5. Set the melt unit on Cycle pump setting if you want the Glue Pro 2 controller to control the pump.

Refer to the glue manufacturer’s data sheets for—

1. Choosing the best glue for your requirements.
2. Determining the best temperatures to operate with to minimize glue charring and maximize life.
3. Setting the proper pumping pressures.
4. Correct material for flushing the system when changing glue types.

GLUE MACHINERY CORPORATION™ offers the following heating tanks—

- Designed for single hose and applicator.
- 12 lbs/hr melt rate, 28 lbs/hr pump rate.
- 3 zone temperature control over 7 ranges up to 410º F.
- Deep rectangular, PTFE coated, 12 lb. capacity melt tank.
- Direct connect port for control devices, timers or foot switches.

G09505-001  Melt Unit 115 VAC
G09505-002  Melt Unit 230 VAC
• Dual hose/applicator capability with 2 channel digital controls with standby mode.
• 28 lbs/hr melt rate, 70 lbs/hr pump rate.
• DC variable speed gear pump.
• 5 zone temperature control over 6 ranges up to 425º F.
• Wide opening, PTFE coated, 14lb. capacity melt tank.
• Direct connect ports for control devices, timers or foot switches.

G09S05-003 Melt Unit 115 VAC F deg.
G09S05-004 Melt Unit 230 VAC F deg.
G09S05-005 Melt Unit 115 VAC C deg.
G09S05-006 Melt Unit 230 VAC C deg.

• 4 Hose/applicator capability with 4 channel digital controls with standby mode.
• 75 lbs/hr melt rate, 100 lbs/hr pump rate.
• DC variable speed gear pump.
• 9 zone temperature control over 6 ranges up to 425º F.
• Wide opening, PTFE coated, 34lb. capacity melt tank.
• Direct connect ports for control devices, timers or foot switches.

G09S05-007 Melt Unit 230 VAC F deg.
G09S05-008 Melt Unit 230 VAC C deg.

GLUE MACHINERY CORPORATION™ also offers a stand to mount any of the above tanks onto, as well as a hopper to extend the tank size. **Floor Stand**

• Common floor stand for all melt tanks.
• 24 inches tall for easy access to melt unit.
• Mounting holes for optional controls.
• Base flanges for floor mounting.

G09E47-001 Melt Unit floor stand
G09E47-002 Hopper extension
The following heated hoses are available—

**Extrusion Hoses**

- Heavy duty, electrically heated hose for hot melt dispensing applications.
- Teflon cores with stainless steel braid reinforcing for long life.
- High temperature insulation and rugged polyester braid cover resists abrasion.
- Stainless steel JIC end fittings and AMP electrical connectors.

<table>
<thead>
<tr>
<th>Length</th>
<th>115 VAC</th>
<th>230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Ft.</td>
<td>G09E02-001</td>
<td></td>
</tr>
<tr>
<td>6 Ft.</td>
<td>G09E02-002</td>
<td></td>
</tr>
<tr>
<td>8 Ft.</td>
<td>G09E02-003</td>
<td></td>
</tr>
<tr>
<td>10 Ft.</td>
<td>G09E02-004</td>
<td></td>
</tr>
<tr>
<td>12 Ft.</td>
<td>G09E02-005</td>
<td></td>
</tr>
</tbody>
</table>

Air pressurized hoses are also available to create swirl patterns where wide bands of glue are required—

**Air Spray/Swirl Hoses**

- Heavy duty, electrically heated hose for hot melt dispensing applications.
- Teflon cores with stainless steel braid reinforcing for long life.
- High temperature insulation and rugged polyester braid cover resists abrasion.
- Stainless steel JIC end fittings and AMP electrical connectors.

<table>
<thead>
<tr>
<th>Length</th>
<th>115 VAC</th>
<th>230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Ft.</td>
<td></td>
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</tr>
<tr>
<td>6 Ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GLUE MACHINERY CORPORATION™ offers a 24 VDC controlled hot melt applicator valve that can be run directly from the controller—

**HM HOT GLUE GUN**

- Complete electric operation - no air needed for extrusion applications.
- Precise needle and seat action produces clean cutoff and prevents dripping.
- Adjustable flow control via the stroke setting.
- Free floating valve design with no internal seals to wear out for long service life.
- Built in thermistor sensor for accurate temperature control of applicator.
  
<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G09E03-002</td>
<td>HM Electric Head 24 VDC</td>
</tr>
<tr>
<td>G09E01-003</td>
<td>HM Electric Head Nozzle</td>
</tr>
</tbody>
</table>

Hand held applicator valves for manual jobs are also available.

- Ergonomic lightweight design (1.7 lbs.).
- Supply fitting comes into top of handgun for ease of use with overhead hose configurations.
- Separate trigger switch for gear pump motor and air activation for swirl/spray provides precise material dispensing and increases pump life.
- Built in thermistor sensor for accurate temperature control of applicator.
- Hose connection swivels 360º for versatility and to avoid twisting.
- Safety trigger lock.
- Use with optional Hose Cradle/Balancer and adapters below for a complete solution.
**Glue Pro 2** is a distance based programmable control system that requires the use of an optical sensor and encoder to detect the leading edge and velocity of the product. The peripheral components must be installed correctly and in the appropriate positions for **Glue Pro 2** to operate properly.

**CROSS BAR BRACKET**

The cross bar is used as a support for mounting the other components. Locate a position where the cross bar can be mounted across the machine, usually near where the glue valves need to be installed. The installation may vary depending on the application. On some installations the cross bar will support all of the components, optical sensor, encoder, glue valves and the controller, while others may require components to be mounted elsewhere.

Position the vertical brackets with two slots on the side frame of the machine with the cutout for the horizontal pieces facing inward. Fasten the horizontal brackets within the cutout of the vertical pieces and secure using the 1/4-20x3/4” thumbscrew. Slide the ¾ inch cross bar through the horizontal pieces and secure by tightening the Phillips screws.

**ENCODER**

The encoder is used to measure the speed that the product is traveling. The friction wheel must be resting on a surface that is traveling at the same speed as the product. The encoder can usually be mounted on one of the drive rollers or a belt.

The encoder has a built-in bidirectional spring mechanism and should be fastened so the spring tension provides adequate friction to keep the velocity wheel from slipping. Secure the encoder to the slotted bracket with a 1/4 -20 nut and lock washer.

The encoder can be adjusted horizontally by loosening the screws which hold the ½” bar, or vertically by sliding the encoder up on its slotted bracket.

Built into the encoder is a 12’ cable. Plug the cable into the operator console into the appropriate receptacle on the **Glue Pro 2** controller.

**Warning**- Make sure no hazards are created or safety features compromised by installing the encoder.
OPTICAL SENSOR

GLUE MACHINERY CORPORATION™ has offered two basic optical sensors. The current sensor is made by Carlo Gavazzi the instruction for setting the sensitivity is described below.
The earlier system were sold with a sensor made by P&F, the instructions for its adjustment are described below.

The optical sensor needs to be mounted so that the product travels under it prior to the glue applicator valves. Mount the sensor as close to the product as possible for maximum sensitivity. It may be necessary to angle the sensor across the sheet or provide a dark background to reduce the amount of reflection from the surface it sees when the product is not there.

To adjust the sensitivity of the sensor, turn the sensitivity adjustment pot counter-clockwise to the minimum. Feed the product under the sensor and turn the sensitivity adjustment pot clockwise to the point where the green “opto” led on the console turns on. Remove the product from under the sensor. If the “opto” LED on the console remains lit it will be necessary to darken the background area or move the sensor to a location where the background does not create a reflective surface. The sensor can be angled reducing the effects of the background reflection.

When working with light product, provide a dark background and set the sensor to “LIGHT ON” by turning the Light ON/Dark ON selection pot clockwise. When working with a dark product, provide a light background and set the sensor to “DARK ON” by turning the Light ON Dark ON selection pot counter-clockwise.

The optical sensor is mounted using the two 3mm screws. The bracket allows the sensor’s angle and height to be adjusted. The opto mounting bracket is then positioned onto the Snap-On bracket and fastened with a thumbscrew. Plug the 24” coiled cable into the connector on the sensor and into the appropriate receptacle on the Glue Pro 2 controller.

CONTROL CONSOLE
Mount the operator console in a location where it can be seen and reached easily. The operator console can be mounted on the “U” bracket supplied with the cross bar bracket assembly. The “U” bracket has a ½ inch bar that slides through a clamp fastened to the cross bar. The console height and angle can be adjusted independently by loosening the thumbscrews. Glue Pro 2 can be powered by a 60 watt or larger 24 VDC power supply. Plug the power supply into the connector labeled “POWER”. The connector locks when in position. To remove the connector press the black button on the top and pull while holding onto the connector shell. Never pull on the wires to remove the connector. Verify that all cables connected to the console are plugged in correctly and positioned so they will not become entangled with moving parts of the machine. Never connect or disconnect any cables while the power is on. Turn the ON/OFF switch to the OFF position prior to changing any connections.

DELIVERY SYSTEM
Without an adequate supply of glue and the ability to move glue freely to the applicator valve, the system will not operate properly. Connect the pressure tank to the glue distribution manifold using large diameter tubing. Keep tubing length to a minimum. Avoid tight turns that may cause the tubing to kink.

Always use a corrosion resistant container in the tank to hold the glue. Flush system completely with water before using glue.
APPLICATOR VALVES
Mount the applicator valve on its bracket using the screws provided so that it hangs above the location that the glue will need to be applied. Connect the glue supply and power lines according to the type of valve being used.

LP glue applicator valves equipped with a shutter mechanism require a 1/8 inch pneumatic control line attached to the small barbed fitting on the stainless steel block assembly. The control system for the shutter is part of the delivery system.

HEAVY DUTY BRACKET SET
GLUE MACHINERY CORPORATION™ offers a heavy duty bracket set with micro head height adjustment and hold down bars. These mount to the same ¾” cross bar that the standard mounting brackets use.
WIRING
The wiring for the GluePro 2 controller is done as shown in the following diagram.
To ensure best results, only GLUE MACHINERY CORPORATION™ recommended adhesives should be used in the GLUE MACHINERY CORPORATION™ valves. Use of adhesives that have exceeded their rated shelf life or have been improperly stored will provide unsatisfactory results. Store adhesives at room temperature. If adhesives are used while below 70 degrees Fahrenheit (21 C), it may be necessary to either dilute the adhesive or raise the temperature. A 20 degree F (11 C) drop in temperature may double the viscosity.
Specifications:

**GENERAL**
- **CHANNELS**: 2
- **EVENTS PER CHANNEL**: 2
- **OUTPUTS PER CHANNEL**: 2
- **OPTICAL SENSOR INPUTS**: 4
- **ROTARY ENCODER INPUTS**: 2
- **GLUE LEVEL SENSING INPUT**: 0
- **SHUTTER CONTROL OUTPUT**: 1
- **BATCH KICKER OUTPUT**: 1
- **HOT MELT PUMP OUTPUT**: 1
- **PROPORTIONAL CONTROL OUTPUT**: 1

**ELECTRICAL DATA**
- **INPUT POWER**: 90 to 264 VAC
- **INPUT FREQUENCY**: 47 to 440 Hz
- **GLUE VALVE OUTPUT**: 2.5 MAX Output current
- **SHUTTER CONTROL OUTPUTS**: 12 VDC, 100 watts
- **BATCH KICKER OUTPUT**: 12 VDC, 100 watts
- **PROPORTIONAL CONTROL**: 0 to 10 VDC,

**PROGRAMMING SPECIFICATIONS**
- **PROGRAMMING RESOLUTION**: .01 inch, .1 mm
- **MAXIMUM GLUE LINE LENGTH**: 100 inch, 2540 mm
- **MAXIMUM PRODUCT LENGTH**: 100 inch, 2540 mm
- **ACCURACY**: .01” at 1,000 ft/min, .3mm at 500 m/mm.
- **PURGE FREQUENCY**: 1000,500,333,250,200,150,100,75,50,25,10, or 5 Hz
- **OUTPUT FREQUENCY LIMITS**: 1000,500,333,250,200,150,100,75,50,25,10, or 5 Hz
- **MAXIMUM PRODUCT IN QUEUE**: 10 pieces between optical sensor and glue valve

**DIMENSIONS**
- **SIZE (HxLxW)**: 13.250 inch x 8.187 inch x 3.025 inch
- **WEIGHT**: 5.6 lbs,

**ENCODER—**
- **OPERATING VOLTAGE**: +5 VDC
- **RESOLUTION**: 500 pulses per revolution
- **SPRING MECHANISM**: Internal bi-directional
- **DESIGN**: Ultra compact
- **FRICTION WHEEL**: Buna rubber O-ring
- **CABLE**: Coiled with modular connector

**LP GLUE VALVE WITHOUT SHUTTER—**

**GENERAL**
- **ELECTRICAL PURGE**: 5 to 333 Hz
- **MECHANICAL MANUAL PURGE**: Continuous
- **CORROSION RESISTANT**: Stainless steel
- **MAXIMUM FREQUENCY**: 333 Hz
- **MAXIMUM DUTY CYCLE**: 100%
- **VISCOITY RANGE**: 300 cps at 50% solids max
- **MAXIMUM PRESSURE**: 60 psi, 4.21 Kg/cm², 4.13 bar

**ELECTRICAL DATA**
- **OPERATING VOLTAGE**: 12 VDC
- **INPUT CURRENT**: 380 ma
- **POWER DISSIPATION**: 4.56 watts
- **ON COMPENSATION TIME**: 2.5 to 4.0 ms
- **OFF COMPENSATION TIME**: 1.75 to 2.5 ms

**DIMENSIONS**
- **HxLxW**: 1.550 x 2.220 x .63 inch, 42.2 x 56 x 16 mm
- **WEIGHT**: 3.5 oz, 100 gm
AVAILABLE ORIFICE DIAMETERS .010” .015” .020”, .254 mm, .381 mm, .508 mm

LP GLUE VALVE WITH SHUTTER—
GENERAL
ELECTRICAL PURGE 5 to 333 Hz
MECHANICAL MANUAL PURGE Continuous
CORROSION RESISTANT Stainless steel
MAXIMUM FREQUENCY 333 Hz
MAXIMUM DUTY CYCLE 100%
VISCOSITY RANGE 300 cps at 50% solids max
MAXIMUM PRESSURE 60 psi, 4.21 Kg/cm², 4.13 bar

ELECTRICAL DATA
OPERATING VOLTAGE 12 VDC
INPUT CURRENT 380 ma
POWER DISSIPATION 4.56 watts
ON COMPENSATION TIME 2.5 to 4.0 ms
OFF COMPENSATION TIME 1.75 to 2.5 ms

DIMENSIONS
HxLxW 1.665 x 2.220 x .63 inch, 42.2 x 56 x 16 mm
WEIGHT 3.65 oz, 103.7gm
AVAILABLE ORIFICE DIAMETERS .010” .015” .020”, .254 mm, .381 mm, .508 mm

HP GLUE VALVE—
GENERAL
ELECTRICAL PURGE 5 to 500 Hz
CORROSION RESISTANT Stainless steel
MAXIMUM FREQUENCY 500 Hz
MAXIMUM DUTY CYCLE 100%
VISCOSITY RANGE 1500 cps at 50% solids max
MAXIMUM PRESSURE 125 psi, 8.77 Kg/cm², 4.13 bar

ELECTRICAL DATA
OPERATING VOLTAGE 12 VDC
INPUT CURRENT 660 ma.
POWER DISSIPATION 7.92 watts
ON COMPENSATION TIME 2.5 to 4.0 ms
OFF COMPENSATION TIME 1.75 to 2.5 ms

DIMENSIONS
HxLxW 3.155 x 1.964 x .750 inch, 80.15 x 49.88 x 19.04 mm
WEIGHT 5.9 oz, 151 gm
AVAILABLE ORIFICE DIAMETER 0.008”, .010”, .012”, .015”, .018”, .020”, .024”

2 GALLON STAINLESS STEEL TANK—
AIR SUPPLY Up to 120 psi at 1 cubic foot per minute
CAPACITY 2 gallons
TANK Corrosion resistant wetted parts

5 GALLON STAINLESS STEEL TANK—
AIR SUPPLY Up to 120 psi at 1 cubic foot per minute
CAPACITY 5 gallons
TANK Corrosion resistant wetted parts

HIGH VOLUME GLUE DELIVERY SYSTEM—
GENERAL
AIR SUPPLY Up to 120 psi at 1 cubic feet per minute
CAPACITY Three 5 gallon stainless steel tanks
TANK SWITCHING Manual / automatic
LEVEL SENSING All three tanks
DISPLAY OF LEVELS Large LED
FILTRATION SYSTEM Integral
TANK Corrosion resistant wetted parts
PROPORTIONAL OUTPUT At the two glue tanks
LOW LEVEL WARNING LIGHT All three tanks
TANK ACCESS Pull out platform with non-tipping feature
WORK SURFACE Slanted stainless steel surface with lower lip
STORAGE DRAWER Yes

DIMENSIONS
www.gluemachinery.com 36
I. If the head operates but glue is not consistent, not of adequate volume, or is not exiting straight—

- Check for glue in the tank.
- Check for a plugged filter.
- Check for additional shut off valves.
- Purge the line completely.
- Clean the nozzle tip on the head.
- Make sure the glue is not past its shelf life.
- Make sure the glue has been stored correctly (temperature range and sealed).
- Make sure the glue is at a proper working temperature.
- Clean, clean, clean the glue delivery system from the entry of the tank to the tip of the valve.
- Check the encoder for slipping if the glue position is inconsistent.
- Check the opto for its settings if the glue position is inconsistent.

II. Use the following question list for most other problems. If the answer to the question is YES, go to the next number, otherwise go through the bulleted list. Refer to the list (III) following these questions for specific problems with possible solutions.

1. Is the display lit?
   - Check the on/off switch on the back of the unit.
   - Check the power cord to the wall outlet.
   - Check the fuse in the power supply.
   - Unplug all cables on the back to check for a shorted device (head, opto, encoder, etc.)

2. Does the glue valve operate on and off with the purge button?
   - Check to make sure the shutters LED is on (units with shutters installed).
   - Check to see that the cable to the valve fully plugged in at each end.
   - On valves with stroke adjustment make sure the adjustment is not set to 0.

3. Does the display blank when an output goes active?
   - Check for a shorted device by unplugging the heads and trying again.
   - Try plugging the device into a different output.

4. Does glue exit the valve when the purge is operated?
   - Make sure that there is adequate pressure going to the glue tank.
   - Make sure the regulator on the glue tank is set high enough.
   - Check to see that the ON/OFF valve is in the on position.
   - Check to see that the filter is clean.
   - Make sure the lines to the head are clean (glue should flow freely if the line is removed at the head).
   - Make sure the head itself is clean (remove the nozzle and check for flow).
   - Make sure the glue is warm enough and the viscosity is low enough to operate.

5. Is the machine speed indicated on the display?
   - Check the encoder to be sure it is turning with the machine.
   - Check to see that the encoder cable is plugged in.
   - Check for damage to the encoder cable.
   - Check for damage at the encoder itself.

6. Is there a job programmed?
   - Program a job.

7. Is (are) the output(s) enabled?
   - Enable the output.
8. Are the shutters opened?
   • Check the cutoff speed compared to the displayed machine speed.
   • Check the encoder to make sure it is turning with the machine.
   • Check the cable on the encoder.
9. Is the opto tripping?
   • Check the position and setting of the opto sensor.
   • Check for an unplugged cable.
   • Check for a damaged opto cable or opto sensor.
10. Is the cable connected to the head?
    • Unplug and plug the connectors at each end of the cable to insure good connections.
11. Is the head electrically operating with the purge button (making noise)?
    • Check for a pattern that is too short to operate reliably.
    • Try a different output or a different channel.
    • Replace the head or the control box.
12. Is there pressure in the glue tank?
    • Check the high pressure air connection.
    • Is the regulator set correctly?
13. Is there glue at the line entering the head?
    • Check for glue in the tank.
    • Open the valve on the outlet side of the tank and any additional in-line valves.
    • Check for a plugged filter.
14. Is there glue flow if the hose is removed at the head?
    • Check for glue in the tank.
    • Open the valve on the outlet side of the tank and any additional in-line valves.
    • Check for a plugged filter.
    • Check for poor quality or contaminated glue.
15. Is the glue skipping sheets, applying twice on a sheet, or operating randomly?
    • Check the product length to make sure the unit will not trip on a window or printing.
    • Check the product length to make sure the opto can trip by the next sheet.
    • Check for enough gap between sheets to allow the opto to respond.
    • Check the encoder to make sure it is turning consistently at the product speed.
    • Make sure the product is not slipping on the machine.
    • Make sure the opto lead value is correct.
    • Verify the on and off compensation times. Incorrect times will cause pattern shift with speed changes.
    • Check for a plugged or dirty nozzle (filter, glue lines, etc.).
    • Check for inadequate glue pressure from the tank and regulator.
    • Check for glue wiping off on machine parts (causing a myriad of possible problems).
    • Check for glue being squeezed out of position (generally pushed down the sheet).
16. Is the glue volume incorrect or inconsistent?
    • On valves with stroke adjustment, change the stroke. On all valves the nozzle size can be changed.
    • Check for correct tank pressure.
    • Check for a dirty nozzle or filter/line contamination.
    • Check for dirty glue.
    • Incorrect roller pressure can cause squeeze problems on the glue. This can also cause pattern shift.
III. The following is a list of possible problems with their possible causes—

1. The opto lead is incorrect when measured by the hand feeding method.
   - The encoder was moved or flexed backwards during the move.
   - The encoder is not turning at the same rate as the paper is moving.
   - Speed is too low on the conveyor.
   - In folding, the roller grove is too narrow (pressure spreads the glue bead).

2. Glue volume is too high.
   - Too much glue pressure.
   - Too large a nozzle in the glue.

3. The glue is splattering on the sheet.
   - Too much glue pressure.
   - Air in the glue line.

4. The glue volume is too low (or not at all).
   - Too little glue pressure.
   - The filter is plugged or dirty.
   - The glue quality is not good (out of date, or improperly stored).
   - The glue is chilled and has become too thick.
   - The cutoff speed is higher than the machine speed.
   - The valve is operating for too short of a time. The minimum on time (or frequency) needs to be adjusted.

5. The glue beads up on the tip of the valve.
   - Too little glue pressure and the glue is not escaping the head during turn off.
   - Contamination in the glue.
   - The head is too close to the paper.
   - Too much pressure and the glue is bouncing back from the sheet to the valve.

6. The valve does not operate.
   - The machine is not above the cutoff speed.
   - The opto is not being tripped by the paper.

7. Glue occurs every other sheet instead of every sheet.
   - The product length is too long.
     Note that too short a product length on printed or windowed sheet may cause extra patterns on the same sheet. Starting the job while the opto sensor is in the middle of a printed or windowed sheet may cause the pattern to be offset.

8. The glue pattern is moving around on the sheet.
   - The encoder is slipping.
   - The encoder is not turning at the same speed as the paper.
   - The paper is slipping or moving on the machine.

9. The dot (or gap) size is wrong.
   - The machine speed is too great and the unit has shifted into time mode. Reduce the speed or enlarge the dot (gap) size.

10. The speed is not shown in the display.
    - The encoder is not physically connected to the machine.
    - The encoder is not plugged into the unit.

11. The display is not counting.
    - The opto is not set correctly—check the opto indicator light on the unit.
    - The opto is not plugged into the unit.

12. The pressure in the glue tank cannot be adjusted or adjusts poorly.
    - Glue has gotten into the regulator. Clean (or soak in water) the glue from the regulator. Avoid moving the tank in a manner that will allow glue to contaminate the regulator in the future.
We are here to provide the support you need every business day.

Please call 8:00 AM to 5:00 PM Eastern Time any weekday, excluding holidays. We are eager to do all that is possible to resolve field issues over the phone, minimize down time and maximize productivity.

When calling for service, please have this manual on hand and the serial number from the back of the display console to help us resolve your concerns expeditiously.

If factory service is required, please photocopy and complete the return form on the following page, then contact us for specific return directions.
# REPAIR RETURN AUTHORIZATION SHEET

**RMA #**

<table>
<thead>
<tr>
<th>SENDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
</tr>
<tr>
<td>Street</td>
</tr>
<tr>
<td>City</td>
</tr>
<tr>
<td>Phone Number</td>
</tr>
<tr>
<td>Contact name</td>
</tr>
<tr>
<td>Purchase Order Number</td>
</tr>
</tbody>
</table>

List all parts being shipped

<table>
<thead>
<tr>
<th>Serial numbers</th>
</tr>
</thead>
</table>

Symptoms/Instructions

<table>
<thead>
<tr>
<th>X</th>
<th>Mark one for preferred return shipping method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 hour air courier (US only)</td>
</tr>
<tr>
<td></td>
<td>Next business day delivery</td>
</tr>
<tr>
<td></td>
<td>Saturday delivery</td>
</tr>
<tr>
<td></td>
<td>2 day service</td>
</tr>
<tr>
<td></td>
<td>3 day service</td>
</tr>
<tr>
<td></td>
<td>Ground delivery service</td>
</tr>
</tbody>
</table>

*All repairs MUST be accompanied by this sheet.*

Glue Machinery Corporation  
4234 Boston Street  
Baltimore, Maryland 21224 USA  
888-202-2468  
info@gluemachinery.com  
www.gluemachinery.com

Signed ____________________________________
DECLARATION BY THE MANUFACTURER
(Directive 89/392/EEC, Art. 4.2 and Annex II, sub B)

GLUE MACHINERY CORPORATION™, USA herewith declares that the product covered by this instruction manual is intended to be incorporated into machinery or to be assembled with other machinery to constitute machinery covered by Directive 89/392/EEC, as amended and that the following (parts/ clauses of) harmonized standards and national technical standards have been applied:


FCC Part 15 stating: “This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

FCC warning stating: “Changes or modification not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.”

ISO/IEC Guide 25 in the category of “Electrical (EMC)”, including in its scope the EMC standard AS/NZ 3548 under the authority of the A2LA and NATA laboratory accreditation agreement.

Class A warning requirement that “This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

The Japanese standard for “Voluntary Control Council for Interference (VCCI) by Data Processing Equipment and Electronic Office Machines, Technical Requirements” which is technically equivalent to CISPR 22 (1993).
1. **ENTIRE AGREEMENT**: These Terms and Conditions, together with terms on the face of Seller’s invoice, shall constitute the entire and exclusive contract (“Agreement”) between Seller and Buyer. This Agreement is intended to be a final expression of the parties’ understanding and agreement with respect to its terms and shall supersede all prior negotiations, promises, agreements and representations not set forth herein. Seller’s acceptance of Buyer’s order is expressly conditioned on Buyer’s assent to these Terms and Conditions of Sale. Any order, whether quoted, shipped or received by Seller, shall be construed as a written acceptance by Buyer of Seller’s offer to sell in accordance with this Agreement, and any such order shall be filled in accordance with the terms as provided in this Agreement. No other terms and conditions shall apply unless specifically accepted by Seller in writing. No modifications of this Agreement shall be of any force and effect unless such modifications are made in writing and signed by the party claimed to be bound thereby. Additionally, no modification shall be effected by an acknowledgment or acceptance by Seller of any oral or written purchase order from Buyer containing any different terms and conditions, and any such inconsistent terms and conditions shall be deemed to be superseded by this Agreement and the other documents delivered by Seller to Buyer.

If for any reason Buyer fails to accept this Agreement in writing, any conduct that demonstrates the existence of a contract, including, without limitations, the delivery of items in accordance with this Agreement prior to written acceptance hereof and acceptance of such items by Buyer, shall constitute an agreement to all of the terms and conditions stated herein.

2. **PRICE**: The prices set forth on the face of Seller’s quotation or invoice is only for the quantities of items listed and the specifications indicated. Except as otherwise indicated on the face of Seller’s invoice, Buyer is responsible for all freight and transportation charges, and all items will be billed at the prices (including applicable freight and transportation charges) in effect as of the date of shipment. All prices and extras, including all freight and transportation charges, are subject to change by Seller at any time without prior notice. In addition, all prices are subject to the addition of an applicable use, sales, excise or other taxes levied by any federal, state or local authority, and Buyer shall be responsible for any such taxes. Any excises, levies or taxes which Seller is required to pay or collect, under any existing or future law or regulation (domestic or foreign), upon or with respect to the sale, purchase, delivery, storage, processing, use, consumption or transportation of any of the items covered hereby, shall be for the account of Buyer and Buyer agrees to promptly pay the amount thereof to Seller upon request.

3. **DELIVERY AND RISK OF LOSS**: Unless otherwise stated in Seller’s quotation or invoice, delivery shall occur, and risk of loss shall pass to Buyer upon delivery of the items to Buyer’s designated delivery point. All items shall be delivered and shipped in accordance with the delivery schedule and instructions indicated on the face of Seller’s invoice; provided, however, that delivery dates are approximate and are subject to reasonable variation.

4. **PAYMENT**: Unless otherwise specified, the terms of payment for each order under this Agreement shall be net cash in 30 days from the date of invoice. Any discount shall be on the purchase price only, exclusive of freight or transportation, taxes and other charges. The unpaid portion of any overdue amounts owed to Seller shall bear interest at the legal rate. Seller shall retain title to all items as security until payment for same has been received. If Buyer at any time fails to make payment as required under this Agreement, Seller may, in addition to any other remedies that it may have as provided by law or in equity, suspend its own performance hereunder and demand collateral sufficient to ensure the payment of all outstanding amounts that are then due and/or that may become due in the future under this or any other agreement between the parties.

5. **LIMITED WARRANTY AND DISCLAIMERS**: Subject to the limitations set forth in these terms and conditions, Seller warrants that the item(s) sold to Buyer will, under normal use and service, conform to any specifications that are listed in this Agreement. Seller reserves the right to change any of its specifications, if applicable, at any time. The limited warranty set forth in this paragraph expires at the earlier of (i) six months after date of shipment or (ii) the period or shelf life specified in the applicable Technical Data Sheet (the “Warranty Period”). This limited warranty is the sole and exclusive warranty provided under this Agreement and extends only.
to the original Buyer from Seller and does not extend to any subsequent purchases or any other uses of any item sold hereunder. No claim against Seller shall be allowed by any party other than the Buyer. **NO OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, INFRINGEMENT, FITNESS FOR PARTICULAR PURPOSE OR OTHERWISE, SHALL EXIST IN CONNECTION WITH THE SALE OR USE OF ANY ITEM HEREUNDER. ADDITIONALLY, NO REPRESENTATION OR WARRANTY MADE BY ANY SALES REPRESENTATIVE OR SELLER WHICH IS NOT SPECIFICALLY SET FORTH HEREIN SHALL BE BINDING UPON SELLER.** All claims under this warranty must be made in writing and delivered to Seller at the address listed in Seller’s invoice prior to the expiration of the Warranty Period or such claims shall be barred.

The limited warranty provided for herein does not cover, and specifically excludes, material failure resulting from normal wear and tear, abuse, neglect, improper installation, faulty maintenance, accidental or intentional damage, damage from fire, floods, earthquakes or other acts of God, and/or defects resulting from seller’s compliance with Buyer’s specifications. Additionally, it is solely Buyer’s responsibility to test and determine the suitability of any item for any intended use, and although Seller may have recommended an item or developed an item at Buyer’s request, Buyer assumes all risk and liability whatsoever regarding the item’s suitability for Buyer’s or any other intended use.

6. **LIMITATIONS OF LIABILITY.** Upon receipt of a timely warranty claim from Buyer in accordance with these terms and conditions, Seller shall have the option either to inspect the item while in Buyer’s possession or to request Buyer to deliver the item to Seller at its factory or other designated site, at Buyer’s expense, for inspection by Seller. Seller shall, at its option, either (i) replace any item that has been properly selected, stored and used and is reasonably determined by Seller to be in breach of the warranty set forth in the foregoing paragraph of these terms and conditions, in which case seller shall then ship the replacement item to Buyer F.O.B. point of shipment; or (ii) if in Seller’s sole judgment circumstances are such as to preclude the remedying of a breach of any warranty by replacement, Seller shall refund to Buyer, by issuance of a credit or otherwise, the applicable part of the purchase price theretofore paid to Seller. **IN NO EVENT SHALL SELLER'S LIABILITY FOR ANY DEFECTIVE ITEMS UNDER THIS AGREEMENT EXCEED THE PURCHASE PRICE THEREOF. IT IS EXPRESSLY AGREED THAT REPLACEMENT OR REFUND OF THE PURCHASE PRICE SHALL BE THE SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY OR ANY OTHER CLAIM IN RESPECT OF SUCH ITEMS, INCLUDING, WITHOUT LIMITATION, THOSE CLAIMS BASED ON CONTRACT, WARRANTY, TORT, OR STRICT LIABILITY. SELLER SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR REMOVAL OR INSTALLATION COSTS, DISPOSAL COSTS, LABOR COSTS, DOWNTIME, DAMAGE TO OTHER PROPERTY, LOSS OF BUSINESS OR PROFITS, OR ANY SIMILAR OR DISSIMILAR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.** The sole purpose of the stipulated exclusive remedy set forth in this paragraph shall be to provide Buyer with free replacement or refund for defective items in the manner provided herein. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Seller is willing and able to replace defective items in the manner prescribed herein or to provide a refund if, in Seller’s judgment, replacement is not feasible or appropriate under the circumstances.

7. **ITEM RETURNS:** Seller, in its sole and exclusive discretion, shall have the right to accept returns of item(s) from Buyer during the applicable Warranty Period. No item shall be returned, however, unless (i) Seller has issued to Buyer a written return authorization number, (ii) Buyer has a valid receipt for the item, and (iii) the Warranty Period has not expired. Buyer shall be responsible for any costs and expenses associated with the return of any item, including, but not limited to, any applicable shipping costs and any costs associated with the proper disposal of the returned items.

8. **FORCE MAJEURE:** Seller shall be excused from, and shall have no liability for, any prohibitions, failures, interruptions or delays in the manufacture or delivery of any items which may be occasioned by matters beyond the control of Seller, including, but not limited to, any act of sabotage, fire, flood, storms, explosion, labor dispute, strike, work stoppage, riot, insurrection, war, act of, or priorities granted by request of or for the benefit, directly or indirectly, of any government body, authority or agency, shortage of raw materials or
supplies, act of God, or any other causes beyond Seller’s control. In the event of any such prohibition, failure, interruption or delay in manufacture or delivery, Seller may, at its option, extend the delivery time or cancel the order in whole or in part. **IN NO EVENT SHALL SELLER BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR CLAIMS OR ANY NATURE RESULTING FROM FAILURE OR DELAY IN DELIVERY.**

9. **TERMINATION/CANCELLATION:** In addition to any other remedies that Seller may have as provided by law or in equity, if Buyer (i) fails to make any payment when due hereunder, or (ii) fails on request to give proper shipping instruction, or (iii) fails to accept delivery at times stated, or (iv) becomes insolvent or otherwise voluntarily or involuntarily becomes subject to any bankruptcy or receivership proceedings, or (v) otherwise fails to comply with any terms and conditions of any contract between Buyer and Seller, Seller shall have the right at its option to terminate this Agreement, recover damages and deduct any undelivered quantities of items from the total quantities of items to be furnished to Buyer, whether under this or any other contract between Buyer and Seller. Additionally, Seller may, at any time or times, suspend performance of any order or require payment in cash, security or other adequate assurance satisfactory to Seller when, in Seller’s sole opinion, the financial condition of Buyer or other grounds for insecurity warrant such action.

Buyer shall not be permitted to modify or cancel its order without the prior written consent of Seller. In no event shall any order be modified or cancelled for any portion thereof already manufactured, blended or in the process of manufacture or blending at the time the request for modification or cancellation is received by Seller. Seller, in its sole and exclusive discretion, shall have the right to make exceptions to this cancellation/modification requirement upon such terms as are satisfactory to Seller and that will protect and indemnify Seller against all loss.

Seller intends to comply with all federal, state and local laws and regulations applicable to the performance by Seller of each order, but any failure of Seller to so comply shall not be a defense to, or excuse Buyer from, performance by Buyer of any order.

10. **INDEMNIFICATION:** Seller shall not be liable for any inaccurate, incomplete, or faulty specifications supplied by Buyer, nor will seller be liable for any infringement or alleged infringement of any patent, trademark, design, or other intellectual property rights arising out of Seller’s compliance with Buyer’s specifications. To the fullest extent permitted by law, Buyer shall protect, defend, indemnify and hold harmless Seller, its directors, officers, shareholders and employees (collectively “Seller”) from and against any and all manner of actions, claims, demands, damages, losses, liabilities, penalties, judgments, costs and expenses of any kind whatsoever (including without limitation, attorneys’ and consultants’ fees and expenses), whether in law or in equity or otherwise, arising out of or relating to (i) any inaccurate or faulty specifications supplied by Buyer, or (ii) any infringement or alleged infringement of any patent, trademark, design or other intellectual property rights resulting from Seller’s compliance with Buyer’s specifications, or (iii) any personal injuries or property damage sustained or allegedly sustained by any person (including, but not limited to, Seller’s agents and employees) as a result of Buyer’s active or passive negligence or misconduct; or (iv) Buyer’s or any third party’s failure to test and determine the suitability of any item for Buyer’s or any other intended user; (v) Buyer’s or any third party’s misuse or failure to use any item in a manner that does not conform to the applicable item specifications or to the requirements of any applicable federal, state or local law or requirement; or (vi) any third party claims asserted against Seller as a result of Buyer’s or any other third-party’s use of any item purchased hereunder. The provisions of this paragraph shall survive the delivery of and payment for all items under this Agreement and shall apply irrespective of whether Seller is also actively or passively negligent or otherwise at fault. In addition, this indemnity specifically covers any claims that may be asserted by Buyer’s employees, and Buyer hereby expressly waives, for purposes of this indemnity only, any immunity it may have under any worker’s compensation or other law from liability for claims brought by Seller pursuant to this paragraph.

Buyer’s indemnity obligations to Seller hereinafore shall not be limited by any limitation on the amount or type of damages, benefits or compensation payable by or for Buyer under worker’s compensation acts, disability benefit acts or other employee benefit acts on account of claims against Seller by an employee of Buyer or anyone employed directly or indirectly by Buyer or anyone for whose acts Buyer may be liable. In no event shall Buyer’s liability hereunder be limited to the extent of any insurance available to or provided by Buyer.

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11. **GOVERNING LAW:** This Agreement shall be governed by, and construed in accordance with, the laws of the State of Maryland without regard to its conflicts of laws. Any and all disputes arising under this Agreement shall be resolved in a state or federal court of competent jurisdiction within the State of Maryland and Buyer hereby irrevocably submits to the jurisdiction of any such court for the resolution of any and all disputes arising hereunder.

12. **WAIVER OF BREACH AND SEVERABILITY:** Any failure by Seller at any time, or from time to time, to enforce or require the strict keeping and performance by Buyer of any of the terms or conditions of this Agreement shall not constitute a waiver by Seller of a breach of any such terms or conditions, nor shall it affect or impair such terms or conditions in any way, or the right of Seller at any time to avail itself of such remedies as it may have for any such breach or breaches of such terms or conditions. A waiver of any of the terms or conditions hereof must be in writing and signed by the Seller. Any such waiver shall not be deemed a continuing waiver, but shall apply solely to the instance to which the waiver is directed. If any term or condition of this Agreement, or portion thereof, is rendered unenforceable under the law, all remaining terms and conditions not affected by such determination shall remain in full force and effect and shall be binding upon the parties hereto.

13. **NO THIRD PARTY BENEFICIARIES:** Except as otherwise provided in writing, nothing contained in this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than Buyer and Seller, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Buyer and Seller and not for the benefit of any other party.

14. **SUCCESSORS AND ASSIGNS:** This Agreement shall be binding upon and shall inure to the benefit of the respective successors and assigns of both Seller and Buyer. Buyer shall not, however, assign this Agreement or any part thereof or the items hereunder without the prior written consent of Seller, which consent Seller may grant or withhold in its sole and absolute discretion.