AutoJet® Chilled Glaze Spray System

OWNER'S MANUAL

AutoJet® TECHNOLOGIES

Spraying Systems Co.®
Experts in Spray Technology

ML00STDGLAZE
spray.com

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SECTION 1

PREFACE

1.1 IMPORTANT

The AutoJet® Chilled Glaze Spray System and all components are produced, tested and checked at the factory. The system can be dangerous if used incorrectly. Read this manual carefully and pay special attention to any safety instructions.

Operators must always follow the general safety instructions in the working area and aim to prevent accidents.

The manufacturer reserves the right to make changes in standard construction without prior notification.

Images and diagrams in this manual may not be exact representations of your system configuration.

1.2 HOW TO USE THIS MANUAL

This manual is intended to be a source of information for the operators and technicians who may be installing, interacting with, or servicing/maintaining Spraying Systems Co.® systems and components.

This manual contains important safety warnings, installation instructions, operating instructions, troubleshooting, and maintenance information.

ICONS

WARNING: The User can be seriously injured, damage their health, and/or seriously damage the system.

CAUTION: Product, process, or environment can be damaged or be in danger if the instructions are not followed correctly.

ATTENTION: Supplementary information for the user draws attention to possible problems.

SECTION 2
SAFETY

2.1 GENERAL SAFETY INFORMATION

READ AND FOLLOW INSTRUCTIONS

All safety related and operating instructions should be read before the system is operated. Follow all operating instructions.

SERVICING

Do not attempt to service this system unless you have been trained or authorized to conduct repairs. Only authorized and qualified service personnel should attempt to service this system. Service by unauthorized personnel will void any warranties.

Allow to cool completely before servicing or cleaning. Even when external surfaces are only warm, internal components can be hot.

WARNING: Before performing any maintenance, make sure all components are completely cool, electrical power is off, and any air/liquid pressure is bled from the system.

REPLACEMENT PARTS

This system has been designed with components that work together to provide the best system performance. When replacement parts are required, only Spraying Systems Co.® recommended components should be used to maintain proper system operation, electrical, and pneumatic safety. The use of any unauthorized replacement parts will void any warranties.

UNINTENDED USE

Use of Spraying Systems Co.® equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property. Examples of unintended use of equipment would be:

- Using incompatible materials
- Making unauthorized modifications
- Removing or bypassing safety guards or interlocks
- Using incompatible or damaged parts
- Using unapproved auxiliary equipment
- Operating equipment in excess of maximum ratings

REGULATIONS AND APPROVALS

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Spraying Systems Co. equipment will be voided if instructions for installation, operation, and service are not followed. All phases of equipment installation must comply with federal, state, and local codes.

PERSONAL PROTECTIVE EQUIPMENT

Spraying Systems Co. strongly recommends the use of appropriate safety equipment when working in potentially hazardous environments or with potentially hazardous chemicals. This safety equipment includes, but is not limited to the following:

- Protective hat
- Safety glasses or face shield
- Chemical-resistant safety gloves and apron
- Long sleeve shirt and long pants

Users of this product should never place themselves in the path of the resulting spray. Users should consult and follow the recommendations of the Safety Data Sheet (SDS) of any chemical or fluid sprayed using this system.

PRESSURIZED SYSTEMS

It is important to recognize proper safety precautions when using a pressurized spray system. When dealing with pressure applications, the system pressure should never exceed the lowest rated component. Always know your system and all component capabilities, maximum pressures, and flow rates.

WARNING: Fluids under pressure can penetrate skin and cause severe injury.

ATTENTION: Always remember to carefully read the chemical manufacturer's labels and SDS and follow all directions.

CHEMICAL COMPONENTS

The use of any chemicals requires careful control of all worker safety.

Spraying Systems Co.® does not manufacture or supply any of the chemical components used in this equipment and is not responsible for their effects. Because of the large number of chemicals that could be used and their different chemical reactions, the buyer and user of this equipment should determine compatibility of the materials used and any of the potential hazards involved.

WATER AND MOISTURE

The control panels are rated NEMA 4, unless otherwise specified. The rating is only with the door closed and properly locked. Being NEMA 4 rated, the control panels can withstand streams of water directed at them; however we suggest avoiding spraying on the unit externally if possible.

WARNING OF SHOCK HAZARD

To reduce the risk of electric shock, do not open the cover on electrical control panel. For service contact Spraying Systems Co.® at 1-866-321-2250.

WARNING: Plug panels into a GFCI outlet.

WARNING: To prevent injury, avoid contact with potentially hot parts. Components can cause severe burns. Do not aim the spray at any person or part of the body. Do not place any part of your body in the spray pattern.

2.2 UNPACKING THE SYSTEM

The system components come carefully packaged to protect them from damage. Use caution when opening the crate. The crate will contain all parts needed to install the unit. Parts of the unit may be wrapped in bubble wrap. Remove all of the packaging material wrapping the system. Once unpacked and removed the from the crate, the system is ready for installation and connection.

CAUTION: The packaging may contain exposed cables, hoses, or other components. Always exercise caution when opening boxes to avoid accidental damage or slicing of various components.

SECTION 3

CHILLED GLAZE OVERVIEW

3.1 INTRODUCTION

The AutoJet® Chilled Glaze Spray System is used in a variety of chilled and glaze applications when temperature and coating control is needed. The system provides temperature control on demand to cool any glaze fluid that must maintain a specific lower temperature for spraying on buns, bread, etc. This system easily pairs with many nozzle or spray header setups that are desired for your glaze application.

3.2 PRODUCT FEATURES

The AutoJet® Chilled Glaze Spray System is a cooling system paired with Precision Spray Control utilizing PulsaJet® nozzles offered by Spraying Systems Co.®. This system provides chilled glaze for your application in an all sanitary design with clamp-style connections and stainless steel pressure tank equipped with a chiller probe for constant cooling of your liquid glazing fluid. The desired temperature of your fluid is controlled by a liquid chiller pump that is constantly recirculating water through the chiller probe that sits inside of the tank. An agitator keeps the fluid moving around the chiller probe to ensure consistent temperature and helps to maintain your fluid in suspension.

This Chilled Glaze System will come on a spray cart with multiple mounting capabilities for an AutoJet spray controller, zoning control panel, power distribution box, level sensor/auto-refill, liquid chiller pump, and mounting of the glaze pressure tank. An optional three-wheeled tank dolly is also available for mounting the chiller pump without all of the other mounting capabilities of the cart system.

3.3 SYSTEM OVERVIEW

The liquid supply module provides pressurized process liquid to the spray nozzles. All module components are made of sanitary design and assembled with sanitary clamp style connections. The Chilled Glaze system will feed the liquid delivery line, distribution manifold, and nozzle(s) directly. The liquid supply module consists of:

- Liquid chiller pump should be primed and ran using clean water.
- Agitator component should be used with clean oiled air operating 0 to 60 psi maximum.
- Liquid outlet drain unit with manual 3-way bypass valve on fluid outlet and 2-way outlet valve for direct fluid line shut off. Sanitary liquid supply hose, 1/2” ferrule, 10 ft
- Air motor driven liquid agitator unit which includes:

  —Fully enclosed air motor

  —Stainless steel shaft with propeller

  —4” port sanitary clamp type mounting
- Liquid chiller unit consisting of:

  —Chiller probe with sanitary clamp style connection to tanks

  —Quick couplers with push in tube fittings on thermowell chiller probe connections
- System dolly (optional): Three-caster, 304 stainless steel construction
- Optional Variable Spray Mount Solution for easy adjustability, cleaning, and mounting of PulsaJet® nozzles.
- Optional zone control panel for specific application targeting by turning on and off individual/groups of nozzles.

3.4 SPECIFICATIONS

The user’s responsibility is assuring the compatibility of the wetted parts of this system with the process liquid and strongly suggested that the user research the liquid to assure compatibility with these materials or submit this list of materials to the process liquid supplier or other knowledgeable authority for analysis.

STANDARD ENVIRONMENTAL SPECIFICATIONS

- To be installed indoors.
- Ambient temperature: 33°F - 90°F (1°C - 32°C)
- Max. humidity: 90%
- Height above sea level: < 3,280 ft.

CONSTRUCTION DETAILS

- Dimensions of Spray Cart with Tank Mounted: 31" W(787.4 mm) x 50" D(1270 mm) x 64" H(1626 mm)
- Dimensions of 55 Gal. Supply Tank: 36" W(914 mm) x 36" D(914 mm) x 85" H(2159 mm)

ATTENTION: An area of 32" (812.8 mm) around the unit should be kept free for maintenance purposes.

ELECTRICAL

- Power supply: 115/230VAC, 60Hz, single phase
- Amperage: 10 amp/115VAC, 6 amps/230VAC
- Cooling Pump: 400W +/- Manufacturer's tolerances

LIQUID DATA

- All liquid characteristics to be determined by user and specific application.
- Liquid must not solidify at room temperature.
- Food Contact Version: Food contact acetal, PTFE/CTFE, Viton®, polyethylene, polypropylene, PVC, EPDM and stainless steel

PRESSURE TANK DATA:

- 25-gallon 316 stainless steel electro-polished liquid ASME pressure tank assembly which includes:

  —Safety relief valve

  —Air inlet unit with manual air inlet pressure regulator with gauge and manual ball valve.

  —FEP liquid level sight tube gauge (Optional)
- Maintain tank temperature at a differential of 30°F (15°C) max from 50°F to 90°F (10°C to 32°C).
- Pressure tank has manual air inlet pressure control using a gauge 0 to 100 psi maximum.

COMPRESSED AIR:

- Inlet pressure: 80 to 100 psi
- Max. air flow: 12 scfm
- Required air quality:

  —Clean, dry air according to DIN ISO 8573-1

  —Solids – Class 5

  —Water content – at least class 4 (*) – cooled down to 59°F below room temperature (location system).

  —Oil content – at least class 5

The user must determine the required air quality in function of the process requirements.

3.5 SPRAY CONTROL PANEL OPTIONS

Spray control modules pair with the optional variable spray mount and provides the means to set operating parameters and control the functioning of the automatic spray nozzles. AutoJet® offers three updated panel models to choose from. The controllers are designed to run electric actuated spray nozzles.

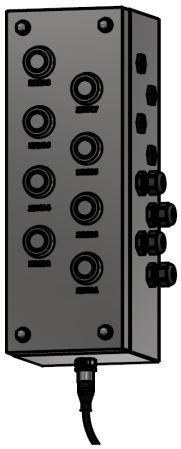
Features	AutoJet 1000+	AutoJet 1750+	AutoJet 2150+
HMI Touch Screen	4.3”	4.3”	7”
Power Input	110-240 VAC, 50/60, 1Ph., 3A	110-240 VAC, 50/60 1 ph., 5A	120 VAC, 50/60, 1Ph., 8A
Washdown Closure	✓	✓	✓
Recipes	✓	✓	✓
Trigger Input	✓	✓	✓
Global Compatibility, multi-voltage power cords available	✓	✓	✓
Stainless Steel Control Panel	✓	✓	✓
Power On/Off Switch	✓	✓	✓
Level Switch	✓	✓	✓
Pulse Width Modulation (PWM)	×	✓	✓
System Outputs	×	✓	✓
Dual Channel*	✓	×	✓
HMI Wi-Fi Access	×	✓	✓
2300 Series Controls	×	✓	✓
Precision Spray Control	×	✓	✓
Encoder Input	×	×	✓
Flow Monitoring	×	×	✓
Pressure Input Sensor	×	×	✓
Ethernet IP	×	×	✓
High Capacity	×	×	✓

Controllers are not included with this system package. These control panels are suggested.

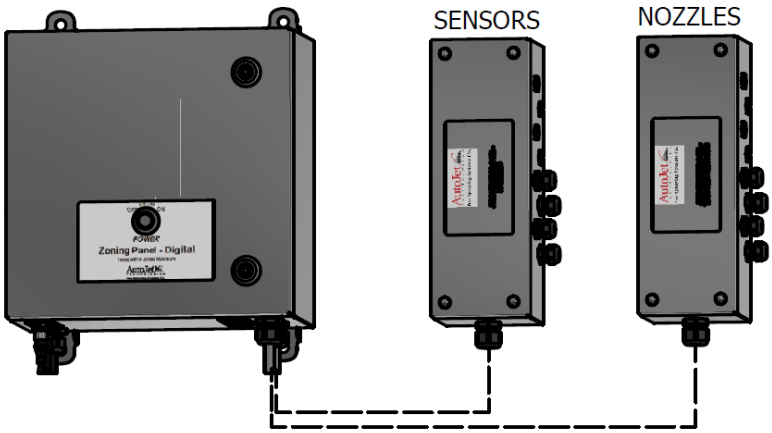
*Dual Channel 1000+ is only capable with electric actuated spray nozzles and air nozzles can only work with a single channel.

3.6 OPTIONAL ZONE CONTROL OPTIONS

Zone control provides the means to individually trigger spray nozzles or groups of spray nozzles. There are three individual options to choose from.



Manual Zone Control Panel



Digital Zone Control Panel with or without timing

MANUAL ZONE CONTROL PANEL

- Max. number of zones: 8
- Eluminated Switch Buttons
- Toggle specific zones ON/OFF if needed for multiple
- applications or sheet widths
- Compatible with SCS Series spray control panels: 1000+, 1750+, and 2150+

DIGITAL ZONE CONTROL PANEL WITH OR WITHOUT TIMING

- Max. number of zones: 8
- External Junction panel - 10 ft. cable whip
- Provides complete control over zoning configuration via customer's PLC
- Compatible with SCS Series spray control panels: 1750+ and 2150+

Note: See Zoning Panel manual for direct instructions when choosing your control option and installing instructions.

ATTENTION: Zone control provides the ability to trigger the spray nozzles/groups of spray nozzles, independently, however, all spray nozzles will operate at the same duty cycle.

SECTION 4

INSTALLING THE SYSTEM

4.1 FLUID DELIVERY SYSTEM

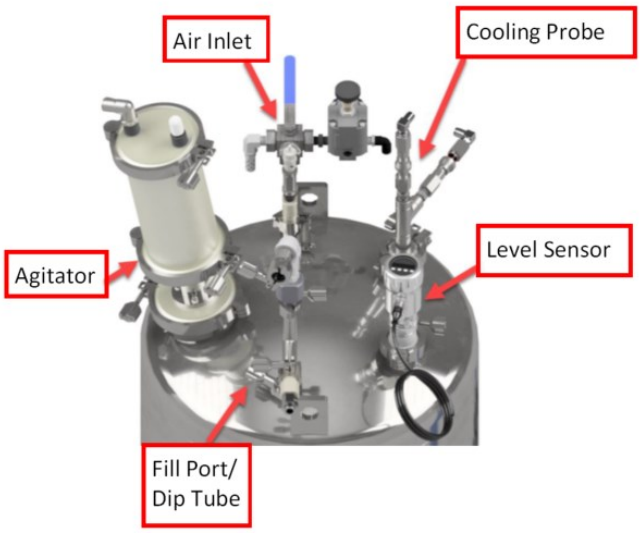
- 25-Gallon, 316 stainless steel electro-polished liquid ASME pressure tank.
- Air inlet unit with manual air inlet pressure regulator, gauge, manual 2-way ball valve for quick safety relief of tank pressure.
- FEP liquid sight tube or continuous liquid level sensor with auto-refill addition Liquid outlet unit with manual 3-way ball valve for tank draining, and 2-way ball valve for direct fluid line shut off.
- Air motor driven liquid agitator unit that is equipped with a stainless steel shaft propeller and sanitary clamp-style connections/mounting.
- Dip tube unit for tank filling and auto-refill capabilities, with clamp-type mounting.
- Sanitary in-line mesh liquid strainer (optional unit).

PROCEDURE:

1. Make sure all sanitary clamps are tightened down and sealed with their necessary gaskets.
2. Ensure the 3-way ball valve on the tank outlet will direct fluid to the nozzle(s). There should be a right angle etched on the handle of the valve indicating flow direction.
3. Connect hose or tubing to the outlet port on the tank to your manifold/ nozzle setup.
4. Connect air to the ¼" ODT fitting on the air inlet of the tank (0-100 PSI Max.)

See Section 4.5 for specific hook-up details for the agitator.

See mechanical drawings for further detail on connections and individual components.

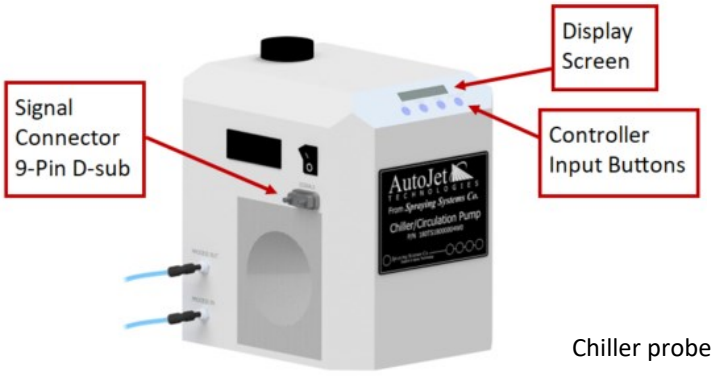


4.2 CHILLER PUMP AND COOLING PROBE

The chiller should be located at approximately the same level or above the system it is cooling to avoid coolant draining back into the tank and overflowing after the ThermoCube is turned off.

- A 400-Watt solid-state electric chiller unit, Universal: 115-230VAC, 50/60 Hz. 7A - 5A.
- Built-in pump – Output: 1Lpm@17psig
- Liquid chiller pump ambient temperature: 50°F - 104°F (10°C - 40°C).
- Chiller probe with sanitary clamp-style connection for tank.
- Quick-disconnect couplers with push-in tube fittings for creating a circulating cooling loop with the chiller pump.

Reference ThermoCube manual for setup, information and troubleshooting.



Chiller probe and chiller pump

PROCEDURE TO SETUP COOLING LOOP:

1. Connect all fluid lines shown in Figure 1 below. ¼" tubing should be used to complete the circulation loop for chilling.
2. Begin filling clean/filtered water into priming port until full.
3. Plug power cable into chiller pump, switch pump ON.
4. Pump will begin circulating. Wait for the pump to pull water volume down and repeat until no water is being pulled down into the pump (this means the pump is primed).

CHILLER PUMP SET-UP:

Follow the directions on the display screen and add the info that needs to be calibrated. Press and hold ENTER (3 sec.) for each input. (Toggle the UP and DOWN arrows to change the temperature set-point.)

Note: If you notice your pump is not actively cooling the settings/ parameters should be checked.

—Ensure your desired cooling temperature is changed and visible on the digital screen of the pump.

—The status menu displays the chiller operating status

and coolant temperature. The operating mode icons:

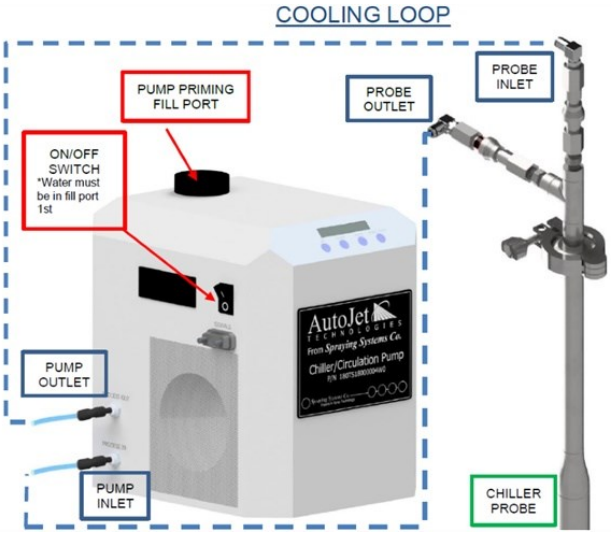


Figure 1: Cooling Loop with chiller pump and chiller probe.

- **Standby mode(*)**: chiller is not controlling temperature
- **Cooling mode (–)**: chiller is controlling temperature and process fluid temperature is above the set point
- **Heating mode(+)**: Heating mode, chiller is controlling temperature and process fluid temperature is below the set point

—Use the START/STOP button to switch to actively cooling(-).

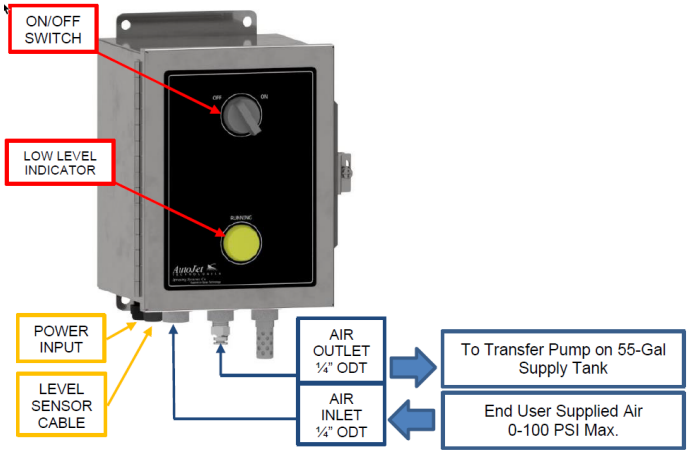
—Anytime you change a setpoint or parameter, the system will switch to STANDBY mode (*).

<u>CAUTION:</u> The manufacturer recommends pure water in the recirculation loop and to not operate the chiller within 5 degrees of the coolant's freezing point. The chiller cube should not be run without fluid or without chiller probe connected.

4.3 AUTOMATIC REFILL AND LEVEL SENSOR

The automatic refill module allows the refill of the liquid pressure tank without having to shut down the spray process. Auto-refill (optional) comes with a level sensor, pneumatic ball valve, and optional drum pump. The auto refill module accepts a signal from the level sensor that sticks out of the top of the tank showing a gauge for the liquid amount and triggers a drum pump to refill the tank.

- Air operated valve timer control panel
- Dip tube with sanitary clamp connection for liquid pressure tank.
- Auto-refill control box – air operated.
- Continuous liquid level sensor – low level indicator for auto -refill timer control box



Auto-Refill Module

AUTO-REFILL PROCEDURE:

1. Connect power to the controller.
2. Plug the level sensor cable into the sensor mounted to the main tank unit.
3. An NPT thread push tube fitting needs to be added to the air inlet port on the bottom of the controller (provided by customer).
4. The auto-refill controller unit will supply air to the transfer pump only when the main tank level is low. In that case, the yellow light on the controller will illuminate indicating the automatic refill has been triggered and is currently filling.
5. Supply air to the inlet on the control box (0-100 PSI max.)

4.4 PROGRAMMING THE LEVEL SENSOR

The auto refill system can be added to the Coating Supply Units and requires a level sensor connection to attach to the control panel. The level sensor displays the current tank level as a percent to full. The refill setpoint can be adjusted for user preference. The tank level sensor comes pre-programmed. However, the set points (Q1 – SP1 and Q1 – RP1) can be adjusted to configure the system specifically for the application.

Menu	Parameter	Name	Description	Preset
Expert	Probe	Probe Length	Length of probe for this application	457 mm
Qa	QAHIGH	High Level 20ma	Maximum tank level (QAHIGH>QALOW)	380 mm
AutCal				
Qa	QALOW	Low Level 4ma	Minimum tank level	10 mm
Qa	QAPOL	Configure	Analog output signal as configured	QA-Nrm
Qa	QATYP	Configure	Setting the output signal	Auto V
DspVal	**Length**	**Configure**	**Display shows fill level in %**	**%**
Q1	SP1	Switching Point 1	High Level - AutoRefill stops filling	380
Q1	RP1	Reset Point 1	Low Level - AutoRefill begins filling	76
Q1	OU1	Switching Function	Output Type - Normally Open/Closed	Qx-Hnc
Q2	SP2	Switching Point 2	Not Low Level - Indicator will turn off at or below this value	50
Q2	RP2	Reset Point 2	Low Level - Indicator will turn on at or below this value	10
Q2	OU2	Switching Function	Output Type - Normally Open/Closed	Qx-Hno

The level sensor displays the tank level as a percent (%) full. However, all parameters are measured in millimeters (mm) from the bottom of the probe. The usable range of the level sensor is between 10 mm and 410 mm from the bottom of the probe, a 400 mm range.

There are two switching outputs that can be adjusted: Q1 and Q2. Output Q1 is used for the Auto-Refill feature and output Q2 is used for the Low Tank Level indicator.

To access the above parameters from the main display (% full), press and hold the “Set” button. Use the up and down arrows to navigate to “Q1MENU” or “Q2MENU” and press the “Set” button. Use the up and down arrows to navigate to “SP1” or “RP1” (or “SP2” and “RP2”) and press the “Set” button. Use the up and down arrows and the “Set” button to change the numeric values assigned to the given parameter. Instructions for setting other parameters can be found on pages 32-35 of the provided component manual.

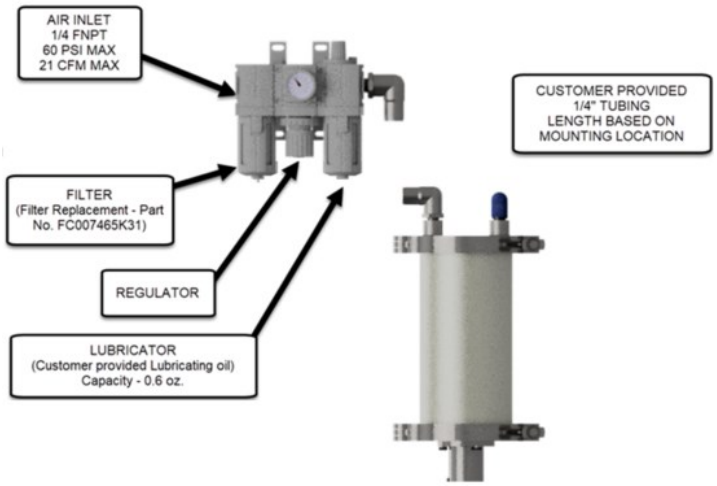
Assuming the tank has been initially filled and given the values in the above table, as the system is being used the level in the tank will decrease. Once the fluid reaches 250 mm from the bottom of the probe, 63% full (100% * (250-10)/380=63%), Auto-Refill will turn on. As the fluid level rises and reaches 390 mm from the bottom of the probe, 100% full, Auto-Refill will be turned off.

If Auto-Refill is switched off or the supply is interrupted, and the fluid level reaches 10 mm from the bottom of the probe, 0% full, the Low Tank Level indicator will turn on. This is intended as a warning that the system is not automatically refilling. The Low Tank Level indicator will turn off once the fluid level rises above 50 mm from the bottom of the probe, 10% full.

4.5 AGITATOR AND FRL UNIT

Customer mounted agitator and FRL Unit that helps keep the liquid in suspension. The filter/regulator/lubricator (FRL) unit provides a consistent oiled air supply to the agitator. The filter in unit will remove particles down to 5 microns in size.

<u>CAUTION:</u> The agitator should never be operated without an oiled air supply. Running without oiled air can result in a mechanical failure. Providing more pressure to the agitator than recommended can result in a mechanical failure of the unit.



Specifications (customer provided materials):

- Bowl capacity: 0.6 oz. of lubricating oil
- 1/4” FNPT air inlet/60 PSI max/21 CFM max
- 1/2” tubing connection between FRL unit to air inlet

4.6 TRANSFER PUMP AND SUPPLY TANK

The supply tank and transfer pump helps automate your spray application and complements the automatic refill module. The auto-recirculation tank is used for the agitation of glaze fluid and should be kept in suspension. Air operated sanitary liquid ball valve allows liquid to circulate from the pump back into the liquid supply tank. When the low level signal is activated in the liquid pressure tank the ball valve will open to allow the flow of liquid into the liquid pressure tank until the high level sensor in tank is activated. When the high level switch is activated, the ball valve will close and the fluid will continue to recirculate from the liquid supply tank. The additional pneumatic valve assembly with proper tubing and fittings will supply a recirculation loop for your glaze supply.

SPECIFICATIONS:

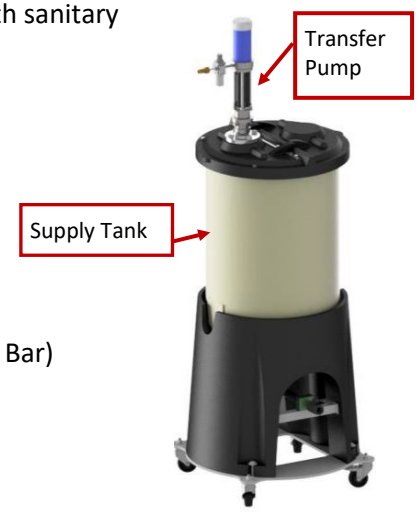
- Dip tube with sanitary clamp connection for liquid pressure tank.
- Transfer pump – 2:1 air-operated stainless steel, 2-ball piston pump with manual air regulator/ lubricator
- 55-Gal polyethylene supply tank with open top lid, and base with drain/ recirculation port
- Auto-recirculation assembly comes with a pneumatic 3-way diverting ball valve, ½” tubing and fittings.

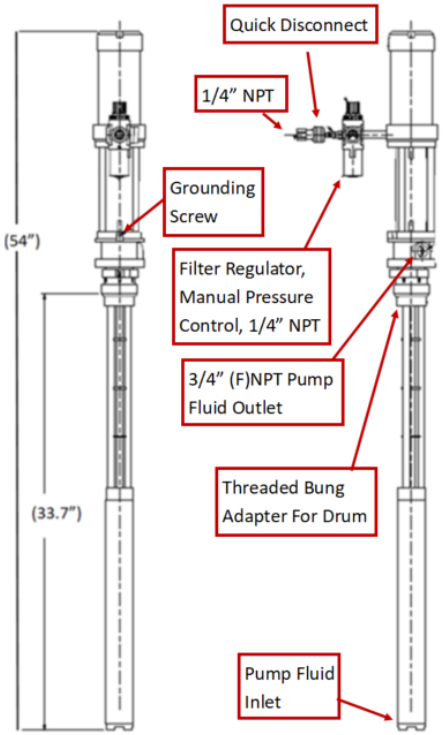
SUPPLY TANK

- Air operated stainless steel 2-ball piston with sanitary clamp outlet adapter.
- Drum lid bung mounting adapter
- Manual air pressure regulator with gauge
- 10ft poly tubing, 1/2” O.D.

TRANSFER PUMP

- Max Air Inlet: 100 PSI (6.89 Bar)
- Max Fluid Working Pressure: 225 PSI (15.51 Bar)
- Max Output Flow: 2.78 GPM (10.52 lpm)
- Air Consumption: 8 SCFM
- Max fluid Temp: 190°F (88°C)





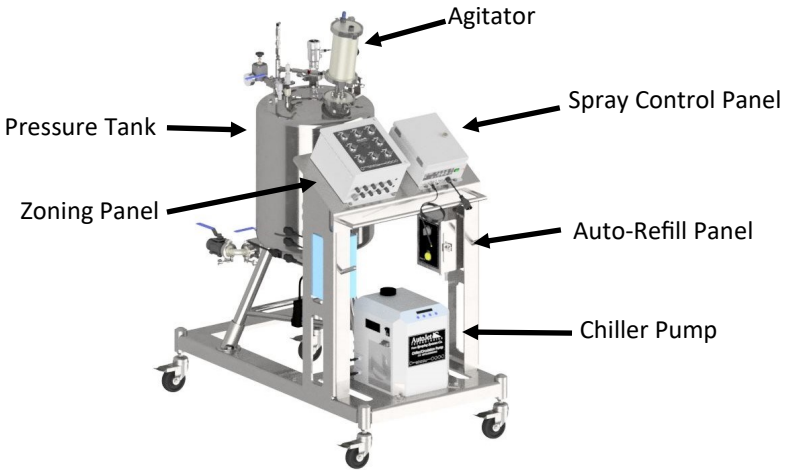
SECTION 5

SYSTEM START-UP AND OPERATION

Before beginning system start-up, walk through once more and check to confirm all your fluid and electrical connections are connected as shown in your provided User Drawing Package. Confirm all sanitary clamps are tightened down and contain gaskets for a tight seal.

5.1 GLAZING SPRAY CART/DOLLY OPERATION

1. If you have the power supply distribution electrical box (120VAC – 15A), you will have one power cord that needs to be plugged in. This will supply power to your spray controller, zone control box (if applicable), and auto-refill control module. If you do not have the power distribution control box, you will need to supply power to each individual electrical control box.
2. Supply power to your chilling pump unit. Your chiller pump should be already programmed correctly after going through the installation steps in Section 4. You may set your desired cooling temperature for the 25-Gal. tanks main supply.
3. Refer to the provided level sensor drawing for programming details. Level sensor must be programmed while the tank is empty to calibrate the sensor appropriately.
4. Confirm your liquid outlet 3-way valve is directed to your fluid line and not the draining port.
5. Your variable spray mount with nozzles (or other possible spray setup) should be hooked up, mounted and adjusted to your initial expectations. Insure all fluid lines have been connected to your nozzle(s) before supplying pressure to the tank.
6. Turn on all your spray control boxes/panels (zoning box, spray controller, auto-refill control box, etc.)
7. At this point, the tank should currently be empty, and the auto-refill will begin filling the main tank supply from your large glazing supply.
8. Once the tank is filled completely - your level sensor will display 100%, then the auto-refill will shut off.
9. Open your valve on the air inlet to be in-line with the regulator, set your pressure regulator to the desired spray pressure and the tank will begin filling.
10. Begin supplying air to your agitator unit to keep your glazing fluid in suspension.
11. The fluid supply line to your nozzle setup should be full of glazing fluid but should have some air trapped. The fluid needs to be purged before starting the system.
12. Make sure all nozzles are switched on before performing a spray purge with all nozzles. (If you need details on zone control box operations and guidance, please see manual provide on Customer's project flash drive and see the customer's drawing package for component details).
13. Purge the nozzles and the fluid supply line through the purge button in your spray controller or by simply setting the spray controls to variable and local trigger. Set duty cycle to 100% and trigger your nozzle until all air has been removed from the line. This will also insure there is no clog in the nozzle tip.
14. Once purged, the system is ready for an application.



SECTION 6

CLEANING RECOMMENDATIONS

ATTENTION: Cleaning procedure is only a suggestion. Customer is ultimately responsible for a sanitation procedure that meets their requirements and standards.

CAUTION: De-pressurize the system before opening the pressure tank for any reason.

6.1 CLEANING PROCEDURE

1) Turn the auto-refill switch on the main control panel to the "OFF" position (if applicable).
2) Close the ball valve on the tank's incoming air inlet port.
3) De-pressurize the pressure tank by opening the 3-way valve on the air inlet port and pulling the ring on the tank's safety valve for a faster de-pressurization.
4) Empty the contents of the pressure tank by using the 3-way valve at the bottom of the tank outlet.
5) Return the 3-way outlet valve to its normal position and re-open the ball valve on the tank's incoming air inlet port to re-pressurize the tank.
6) Use the control panel to spray the nozzles until all process fluid remaining in the hoses, manifolds and nozzles is discharged.
7) De-pressurize the tank, open and remove the agitator from the large port on top of the tank. Use this port for putting your cleaning solution in the tank. If you have the auto-refill system with the 55 Gal. supply tank, you should start with cleaning this tank. Fill the tank with your cleaning solution to prepare for auto-refill into main tank.
8) Clean the auto-refill system (as applicable)
   a) Liquids for cleaning, rinsing, and sanitation can be added to the open-top supply tank.
   b) Turn the auto-refill switch to the "ON" position (provide air to the auto-refill pump) to begin filling.
   c) When complete, turn the auto-refill switch to the "OFF" position to stop pumping.
   d) Repeat this process with appropriate fluids till the system is thoroughly flushed.
9) Clean the pressure tank, delivery hose and nozzle assemblies.
   a) Liquids for cleaning, rinsing, and sanitation can be added through the largest port on top of the tank or fed through the auto-refill system.
   b) Any inside surface on the pressure tank, sensors, or dip tubes can be manually cleaned, scrubbed, or wiped down.

ATTENTION: The Teflon lining of the jacketed hose is easily damaged; brushes/other tools should never be used to clean/remove solids from the hose.

   c) Close any ports on the top of the pressure tank and reopen the ball valve on the tank's incoming air inlet port to re-pressurize the tank.
   d) Use the control panel to spray and move cleaning and sanitizing fluids through the hoses, manifolds and nozzles.
   e) Large volumes of cleaning or sanitizing fluid can be removed from the tank directly through the 3-way valve at the bottom of the tank.
      —This should never be done while the tank is under pressure.
      —This valve will divert the tank's outlet but isolate any fluid remaining in the hoses, manifolds, and nozzles. This fluid needs to be flushed through the nozzles under pressure.
10) The fluids, time to flush, repetitions, etc.… are to be determined by the user to meet your required level of cleaning and sanitation.
11) After cleaning and sanitation, return all valves and port covers to their production ready state.

6.2 MONTHLY MAINTENANCE

PNEUMATIC

Check all pneumatic connections for leaks and tighten or replace as needed.

LIQUID

Check all liquid connections for leaks and repair or replace as required.

Check all tubes and/or hoses for leaks and repair or replace as required.

Check liquid components for leaks and repair or replace as required.

ELECTRIC

Check control panel for loose or corroded wires.

ATTENTION: Any long term shut-down requires that all liquid lines, liquid components, pumps, spray nozzles be flushed and cleaned thoroughly.

SECTION 7

REFERENCE MATERIAL

Drawings

180TS18000036W0	Glaze Tank, Sanitary 25-gallon, Sanitary Ports
240TS24000016W0	Agitator, 4" Sanitary, Air operated
180TS18000003W0	Chiller, Probe, 1 1/2" Sanitary, 23"
180TS18000004W0	Chiller, Liquid Pump
160TS16VC0002W1	Air Inlet Kit, Manual Regulator
240TS24000129W0	Liquid Outlet Assembly
180TS18000015W0	Strainer, In Line, 60 Mesh
180TS18000005W0	Filter, Regulator, Lubricator
240TS24000100W0	Liquid Distribution, Single Line
180TS18000025W0	Dip Tube, ¾” Sanitary
180TS18000024W0	55 Gal. Supply Tank, with 2:1 Ratio SS Transfer Pump
240TS24000047W0	Tank Continuous Level Sensor Assembly
240TS24000131W0	Auto-Refill control box

SECTION 8

TROUBLESHOOTING

If these troubleshooting steps are followed and the system still does not function, please contact your local Spray Specialist by calling 1-800-95-SPRAY (1-800-957-7729).

1. SPRAY CONTROL PANEL OR ZONE CONTROL PANEL WILL NOT POWER ON.

a. Ensure power cord is plugged into controller or zone control panel individually or the power cord for these units are directed into the power distribution box and the main power cord for this box is plugged in.

b. Confirm no power cables have been damaged.

c. If power still does not work on one or all your controllers, the individual wiring will need to be inspected on the power distribution box. Refer to the electrical drawings and mechanical drawings in Customer's Drawing Package for further details.

2. LEVEL SENSOR GIVES YOU AN ERROR OR VALUE(S) WHEN THE TANK IS FULL OR FILLING.

a. The sensor must be calibrated with no fluid in the tank.

b. A factory reset and re-calibration should be done to insure the issue is only a program/ calibration issue.

— Hold "SET" down for three seconds or more. Toggle "UP" or "DOWN" to locate "RstFct". This will allow the user to set parameters back to factory setting.

—With the parameters now reset, using your specified level sensor drawing (located in Customer Drawing Package) go through the guidelines and parameters table on the drawing to set the correct parameters.

—Refer to level sensor manual provide for further details on functionality and parameters.

c. If your issue does not appear to be a calibration/ parameters issue, please contact your local Spray Specialist.

3. SPRAY PATTERN/DISTRIBUTION AND FLOW ISSUES

a. If you are seeing issues with your spray pattern, coverage, and flow of your spray product, the first place to check is the liquid filter/ strainer being used in-line with the fluid delivery.

—Ensure all pressure has been removed from your tank before opening anything and removing clamps.

—On the outlet of your Glazing spray system you may find a strainer assembly between the 2-way ball valve and the 3-way ball valve.

—Remove the 2.5" sanitary clamp that is holding to symmetrical sanitary connector fittings. Between these fittings will be a 60-mesh gasket screen. Inspect and clean the gasket screen of any solids buildup.

b. Next, the nozzle(s)/header(s) should be inspected for clogging. Remove the tips from your spray nozzle(s). Clean with water or preferred cleaning solution. DO NOT use any tool to poke and scrape at the tips orifice to remove a clogged substance. Use high pressure to dislodge any substance clogged in the tip.

c. The entire system, especially the nozzles/tips should be flushed clean with water or preferred cleaning solution after the completion of any system usage. The lines should not be shut down for long periods with spray product left in it.

4. CHILLER/ CIRCULATION PUMP ISSUES

a. Ensure the power cord and power switch is turned on the side of the pump. The fan will be running, and you will be able to hear it operating.

b. Ensure your pump has not run dry and is primed correctly via the fill port on the top of the pump. The water level should be almost to the top of the fill port.

c. If you notice your pump is not actively cooling, settings/parameters should be checked.

—Check to make sure your desired cooling temperature is changed/ visible on the digital screen of the pump.

—Next to the temperature setpoint you have selected, there will be an "*" symbol or a "-" symbol. The "*" means your pump is in a STANDY mode and is not actively cooling. The "-" means the pump is actively cooling.

—Use the START/STOP button to switch to actively cooling "-".

—Anytime you change a setpoint/parameter, the system will switch to STANDBY mode and shows "*" symbol.

SECTION 9

SPARE PARTS LIST

GLAZE SPRAY CART/DOLLY

Part Number	Description
CL004759K61	Clamp, 1/2" to 3/4" sanitary tri-clover, 316 SS
CL004759K62	Clamp, 1" to 1.5" sanitary tri-clover, 316 SS
CL00AC13HH425	CLAMP, SANITARY, 2-1/2", 304SS
CL004322K156	Clamp, 4" sanitary tri-clover, 316 SS
FRMM5044K11	Gasket, 1/2" sanitary tri-clamp, Viton.
FRMM5044K12	Gasket, Sanitary, 3/4" sanitary tri-clover, Viton.
FRMM5044K13	Gasket,1" sanitary tri-clover, Viton.
FRMM5044K14	Gasket, 1-1/2" sanitary tri-clover, Viton.
FI00MPVS250X060	Screen,2-1/2" Viton Tri-clamp gasket, 60-Mesh, 316SS Mesh
LS00FP1000G1NMB_AC23	Level sensor, analog 4-20 mA, TDR
WR00RKV45T10	Level sensor cable, yellow, M12 connection
PRXXPACPAPABIN0	Gauge for Air inlet kit, 0-100PSI, back mount
VC00110-BC	Regulator for air inlet kit, manual, high relief
CO00104001C1	Entire chiller/ circulation pump
WR00WPSD1CVR	Connector cover for chiller pump, waterproof
160TS16VC0009W1	Caster wheels, 4” polypropylene, locking, with hex. nut
240TS24000047W0_SU01	Filter/Regulator/Lubricator (FRL) for oiled air supply to agitator

AUTO-REFILL SUPPLY TANK, TRANSFER PUMP AND AUTO-RECIRCULATION

Part Number	Description
TK0012342	Tank, lid, 23" diameter, polyethylene
PU00GR295616	Pump, Transfer, 2:1 ratio
PU00GR295616_SP01	Kit, Repair, Seals, Upper, T2, for PU00GR295616 Pump
PU00GR295616_SP02	Kit, Repair, Seals, Lower, T2, for PU00GR295616 Pump
PU00GR295616_SP03	Kit, Repair, Shaft, T2, for PU00GR295616 Pump
PU00GR295616_SP04	Kit, Repair, Extension TU, for PU00GR295616 Pump
VC00660731	Regulator - Manual Air Kit
MA002479T31	Caster for auto-refill supply tank
VA008P014612	Pneumatic valve for auto-recirculation on 55 gal. supply tank

Please contact your local Spray Specialist by calling 1-800-95-SPRAY (1-800-957-7729).

Warranty is one (1) year on non-wear parts from ship date. Wear items are covered for manufacturing defect only for a period of one (1) year. Wear items include, but may not be limited to, Liquid pump and Liquid regulator. Seller warrants that its products will conform to and perform in accordance with the products' specifications.

Seller warrants that the products do not infringe upon any copyright, patent, or trademark.

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