AccuCoat® MV10 Heated System

OWNER'S MANUAL

AutoJet® TECHNOLOGIES

Spraying Systems Co.®
Experts in Spray Technology

ML00MV10HTSYS
spray.com

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SECTION 1

PREFACE

1.1 IMPORTANT

The AccuCoat® VC10 Heated 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 read 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 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.

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/damaged parts
- Making unauthorized modifications and using unapproved auxiliary equipment
- Removing or bypassing safety guards or interlocks
- 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 and chemicals. This safety equipment includes, but is not limited to:

- Protective hat, long sleeve shirt, long pants and safety glasses/face shield
- Chemical-resistant safety gloves and apron

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, follow SDS, and all directions.

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.

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.

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

SYSTEM OVERVIEW

3.1 PRODUCT FEATURES

The Spraying Systems Co.® AccuCoat® MV10 Heated Spray System is a system that can be used in a variety of viscous heated applications when temperature and pressure control is needed. System consists of a control panel mounted to an optional frame and the option of Spraying Systems Co. spray control panels for spray control and operation. Power is distributed to the pump and heater from the system control panel.

The operator controls mounted on the control panel consist of the power buttons, and various illuminated selector switches. A lockout/disconnect switch is mounted on the door. An illuminated “Power On” pushbutton and a “Power Off” pushbutton are located on the door. A low level indicator is illuminated when the tank is low. Illuminated selector switches for “Pump On”, “Heater On”, and “Auto-Refill On” (optional) are used to activate said features; lamps will be lit when features are running. The heater can be turned on only when the circulation pump is running.

Functions:

A circulating conditioning line provides heated fluid to all the jacketed components of the system. This line consists of a centrifugal pump, immersion heater, thermometer, pressure gauge, and return reservoir.

The centrifugal pump circulates the heated fluid throughout all the jacketed components.

A regulator allows for the system to be filled with a pressurized source of water or glycol solution. DI water is recommended to limit mineral deposits. The regulator limits the pressure of the system for safe operation.

An immersion heater maintains the temperature set point of the heated fluid and, by extension, the process fluid. A pressure gauge high limit switch turns the heater off at 650°F for fail safe protection. A 50/50 mixture of propylene (or ethylene) glycol and water must be used for temperatures of 180°F-200°F.

A temperature controller thermometer provides temperature regulation to the in-line immersion heater. Temperature feedback is provided by the thermometer in the tank for reference.

A level switch verifies that enough fluid is in the system so that components are not damaged. Finally a return reservoir provides room for expansion of the heated fluid, and pressure relief for over filling of the system.

Note: All the conditioning lines from the pump, through all jacketed components, and back to the return reservoir must be run in series. Never split the flow path as this could result in cold spots.

Fluid delivery is accomplished via jacketed pressure tanks, valves, hoses, and spray nozzle(s). The tank is a pressure vessel that is pressurized with air to maintain a given setpoint at the nozzle location. To ensure constant heating the liquid delivery components are jacketed including the ball valves mounted on the tanks. A hose delivering the fluid from the tank to the nozzles is completely jacketed. Finally the nozzles themselves are jacketed to maintain set temperatures. The tank is an ASME pressure vessel. The tank comes equipped with 125psi safety valve, air regulator, and ball valves. The main air supply goes into the inlet 2-way shut off valve. The air inlet pressurizes the tank to maintain pressure setpoint at the nozzles. Before opening the pressure tank, make sure the pressure in the system is relieved.

3.2 SYSTEM SPECIFICATIONS

The AccuCoat® MV10 Heated Spray System is powered by 230 VAC 1 ø. The main air supply is connected to the system via 1/4" NPT (F) located on the tank.

Panel Power: 230VAC +/-15% 1 ø, 60Hz, 25A max (Plug in a grounded GFCI outlet)

Air Input:

- Pressure: 80 psi (min), 115 psi (max)
- Inlet Port: Tank: 1/4" NPT (F)
- Consumption: Main System: 5 SCFM maximum

Environmental

- Operating temperature range: 32°F to 109°F (0°C to 42.8°C)
- Humidity Range: 5 to 95% (non-condensing)
- Enclosures: NEMA 4
- Weight: Control Panel/tank skid - 360lb (empty)
- Dimensions: 58" H x 45" L x 35" D

Level Switches

- TDR (Time Domain Reflectometry) Level Sensor
- -4°F to 302°F (-20°C to 150°C), 232 psi max. (16 bar), 24 V DC
- High Frequency Capacitive Level Switch (stand pipe)
- 185°F max. (85°C) continuous, 302°F short time (150°C)

Pressure Tank

- 10 gal, Jacketed, Insulated
- 304 SS construction Electropolished
- 40psi max jacket
- 100psi max tank
- 300°F max

Centrifugal Pump

- 1/3 hp 230VAC 1 ø

Immersion Heater

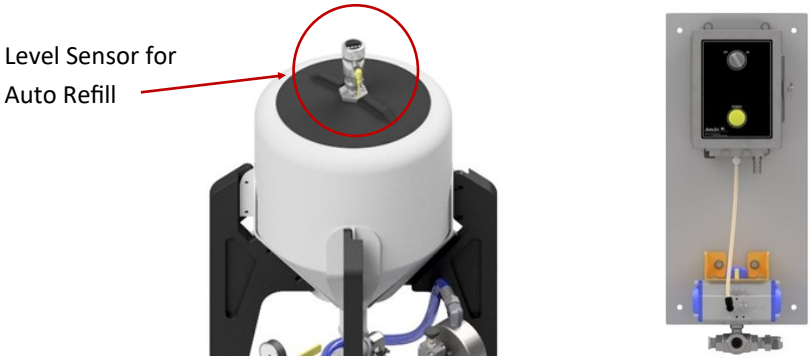
- 304 SS screw plug, Stainless steel heating element, safety shut off
- 70°F - 200°F (21°C - 93°C) range, 3KW, 230VAC 1 ø

3.3 OPTIONAL ADD-ONS

These add-on systems are for any liquid delivery supply units.

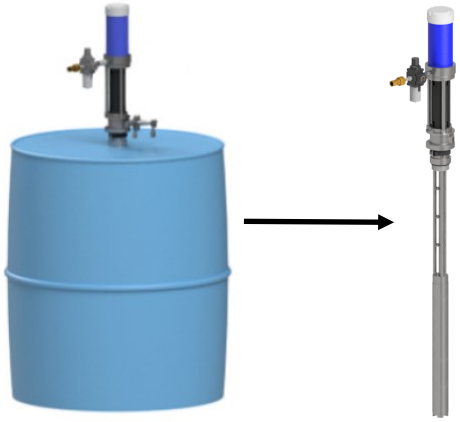
— AUTO-REFILL

Auto-Refill is an optional module that helps refill the supply tank during operation. The auto refill system can be added to the Coating Supply Unit 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. For more information see Auto-Refill/Level Sensor section.



— TRANSFER PUMP

Easily transfer low to medium viscosity liquids out of drums and totes. air driven, 2:1 ratio piston pump, with air regulator.



3.4 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 not included with this system package. These controllers are suggested.

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

SECTION 4

SYSTEM HOOK-UP

Your system is a self-contained heating system that requires power for the main panel. This system must be pared with a control panel dedicated to the nozzle on/off control.

4.1 CONNECTIONS

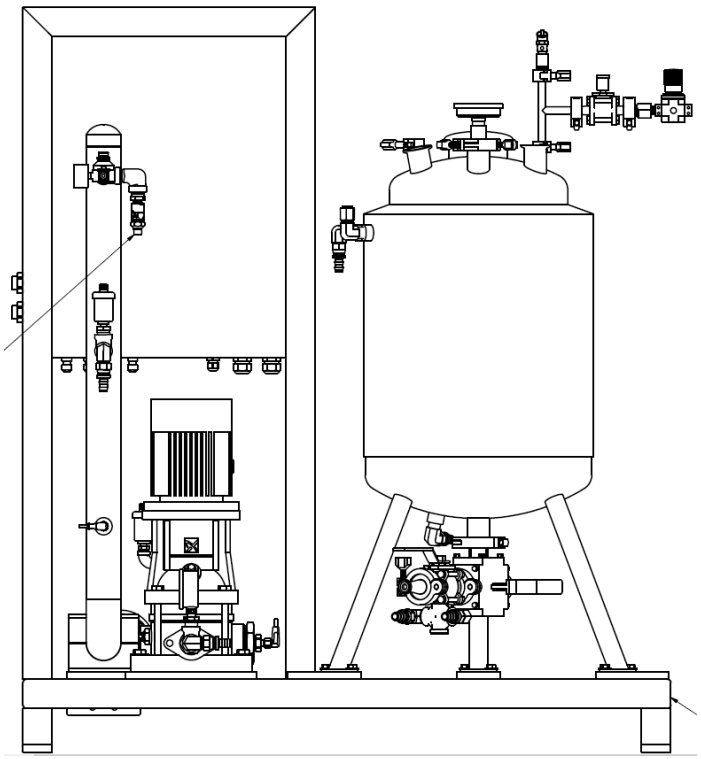
Connect all process lines and blue conditioning lines to the tanks, pumps and nozzles. Please note the nozzle is symmetrical, and inlet/outlet water lines can be reversed. Your nozzle(s) are electrically actuated, and strictly hydraulic in nature. Connect the cable for each nozzle, and wire in appropriately. See the manual for the appropriate Spraying Systems control panel schematics and reference drawings. Main air is configured to supply the panel and remote components with a single connection.

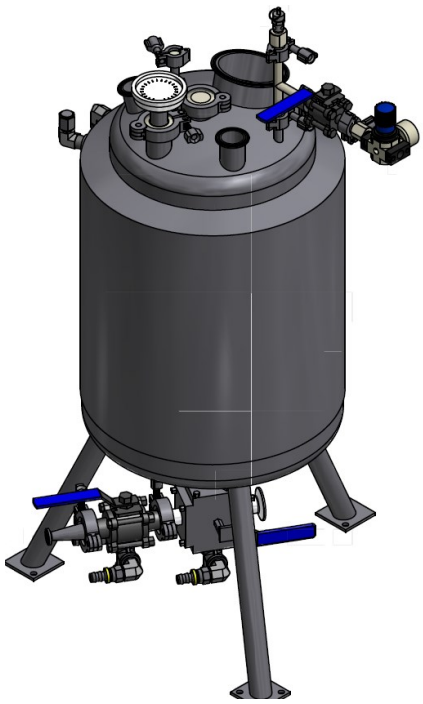
Note: All conditioning line hoses should be connected in series, and never in parallel.

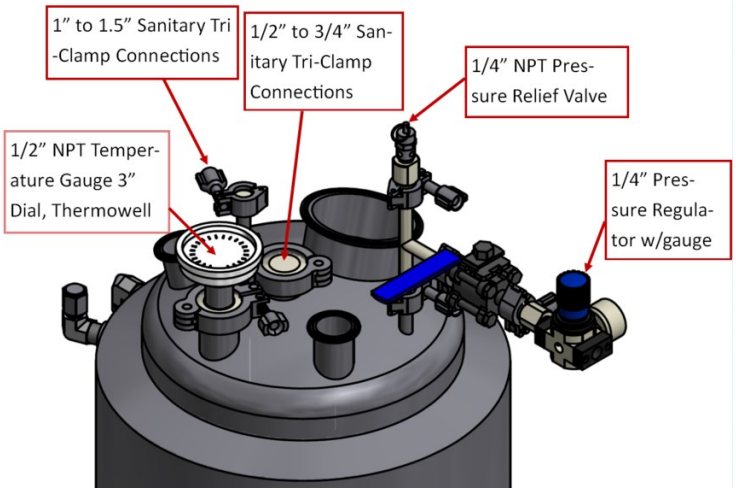
Hoses on the main frame assembly goes from the conditioning fluid to the pump outlet and to the jacketed nozzle(s), returning through the jacketed hose to the components at the base of the tank, then exit at the top of the tank and returns to the standpipe. This allows for air relief of the conditioning circuit at that connection. When initially filling the heating circuit, DI water is suggested at temperatures below 180°F (potable water could be used). For temperatures 180°F-200°F, the system requires a glycol solution, typically 50/50. All air vents should be turned to the open position indicated. They are automatic and will close when the air has fully escaped. Once all air bubbles have been relieved, hand-tighten the 1/2G sensor being careful not to over tighten. An air pocket could initially reside in the level switch on the stand pipe that can be relieved by loosening the 1/2G sensor connection recognizable by an O-ring.

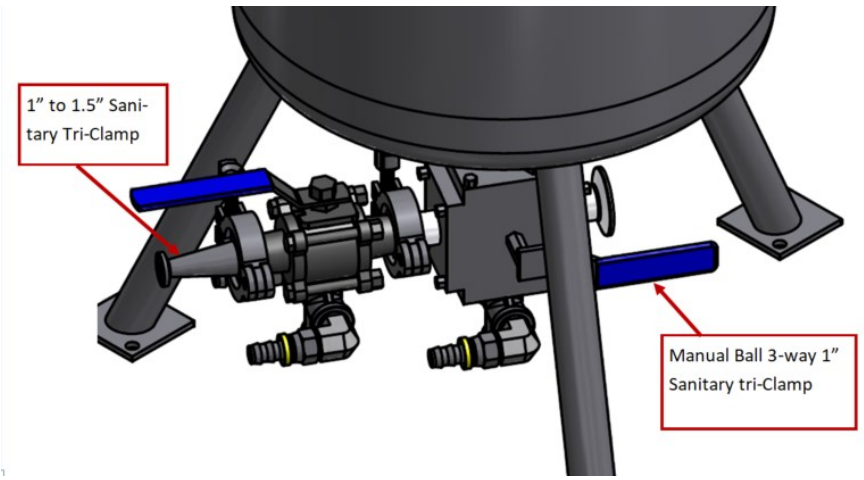
CAUTION: The AccuCoat® MV10 Heated Spray System is powered by wiring into 230VAC 1 ø service. Do not connect power until all wiring, and hookup of the system is complete.

WARNING: The air supplied to the machine must be clean, free of moisture and lubricating fluids; failure to do this voids all warranties.





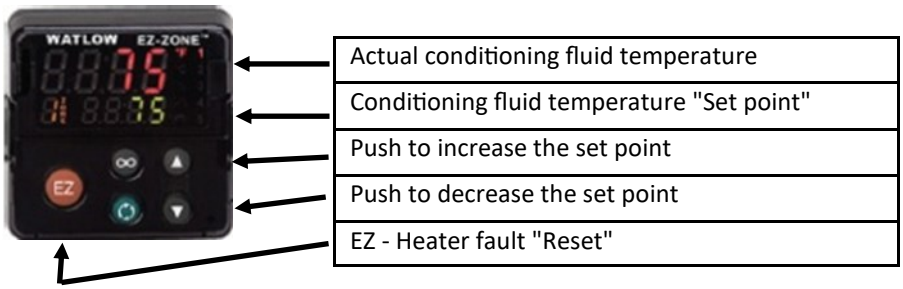

1” to 1.5” Sanitary Tri -Clamp Connections
1/2” to 3/4” Sanitary Tri-Clamp Connections
1/4” NPT Pressure Relief Valve
1/2” NPT Temperature Gauge 3” Dial, Thermowell
1/4” Pressure Regulator w/gauge


1” to 1.5” Sanitary Tri-Clamp
Manual Ball 3-way 1” Sanitary tri-Clamp

4.2 WATLOW CONTROLLER

FRONT PANEL CONTROLS AND INDICATORS

- **Power on pushbutton, illuminated –** when momentarily pressed, applies power to the AccuCoat® MV10 Heated Spray System.
- **Power on indicator**- when indicator is on, indicates power is applied to the system.
- **Power off pushbutton** - when momentarily pressed, turns off power to the AccuCoat MV10 Heated Spray System.
- **Disconnect** - use to disconnect power from the panel and components.
- **Pump selector switch, illuminated –** when selector switch is on, pump is enabled.
- **Pump on indicator-** when indicator is on, pump is on.
- **Heater selector switch, illuminated –** when selector switch is on, heater is enabled (pump must be turned on).
- **Heater on indicator-** when indicator is on, heater is on.
- **Auto-Refill selector switch, illuminated –** when selector switch is on, Auto-Refill is enabled.
- **Auto-Refill on indicator-** when indicator is on, Auto-Refill is filling the tank.
- **Low Level indicator**- when indicator is on, indicates the level in the tank is below the low level setpoint.
- **Heater controller-** use to program the heat controller and input the heater set points.



Reference the component manual for further operating instructions.

OPERATING PROCEDURES:

1. Disconnect turned on
2. Operator powers system on
3. Operator opens air vents on the heating loop
4. Operator fills system with conditioning fluid (water)
5. Operator turns pump on and purges air in line
6. Observe the conditioning fluid pressure (20-30psi)
7. Operator sets water temperature with arrows on the heat controller
8. Turn on heater and observe temperature and adjust to desired temperature if needed
9. Turn off heater/pump
10. After use disconnect air and drain tank if needed.

SECTION 5

OPERATION

5.1 SYSTEM START-UP

ATTENTION: Before starting the system for the first time, be sure to follow all instructions on the drawings and in the "System Hook Up" Section of this manual. Always check all electrical, hydraulic, and pneumatic connections before powering on the system or turning on air and water supply.

WARNING: The heating circuit and all fluid delivery lines should be flushed prior to connecting to nozzles and running the system.

5.2 FILLING THE HEATING CIRCUIT

1. Begin by turning the disconnect switch to the "On" position.
2. Apply power to the system using the "Power On" pushbutton. The Amber indicator will light up.
3. Prior to the system being run for the first time, the heating circuit must be filled with conditioning fluid. DI water is acceptable for temperatures of 180°F and below. For temperatures of 180°F -200°F, a 50/50 mixture of propylene (or ethylene) glycol to DI water must be used.
4. Connect the conditioning fluid source to the ¼" NPT (F) valve at the top of the standpipe.
5. To fill the reservoir, open the valve and adjust the regulator. The regulator should be set to 5psi. The over-pressurization valve past the regulator will open at 10psi.
6. Open the air purge vents on the return line and pump; these will automatically purge air out of the water line.
7. As conditioning fluid fills the reservoir, loosen the 1/2G level sensor connection recognizable by an O-ring (bottom connection on the stand pipe).
8. Allow the fluid and air mixture to escape from the loosened connection until no air bubbles are seen; hand-tighten the sensor to begin building pressure.
9. Once the small, yellow light on the sensor is lit, allow the system to continue to fill for several minutes. Wait until the inlet regulator at the top of the standpipe levels off at a pressure, making sure it is adjusted to 5psi at a no-flow condition.
10. Turn the pump on by using the selector switch on the system control panel. If the standpipe fluid level drops below the level sensor, the pump will automatically be turned off and the Pump On light will be off.
11. As the system continues to fill, the pump should resume operation. When the pump is running, water pressure at the outlet of the pump should be approximately between 20-35psi.
12. During the fill operation if the water pressure does not exceed about 20psi, make sure all the air vents are open. Once all air is purged out of the system, the pressure at the pump outlet should remain steady.

If pressure surges on the regulator of the return reservoir, or a large amount of water is relieved out the over flow check valve after shutting the pump off, then air may still present in the system.

13. Repeat the purge process described above, and potentially try the following:
14. Find the conditioning lines highest point and loosen the fitting until liquid is consistently leaking.
15. Then tighten the fitting. Loosen the point level sensor on the heated system return tube to release any air trapped.
16. Retighten the sensor when complete.
17. Excess fluid in the system will be relieved when the system is heated to your highest operating temperature.

Note: Less than 10psi could indicate air in the system, or low fluid level.

WARNING: Relieving air from the conditioning line should never be done when the system is hot; when relieving, fluid can be dispensed onto surrounding objects and people.

Filling and Emptying the Tank

To fill the tank, simply depressurize the tank, open the tank lid and fill to desired level. Make sure fluid source is +/- 15°F of the process temperature.

To empty the tank, either open the 3-way valve at the tank outlet to the draining port or use the spray controller to flush the tank contents through the spray nozzles or header.

Heating the System

Set temperature on the heater via the heat controller on the front panel. Once the system is filled and the conditioning fluid is circulating properly, turn on the heater. Wait until the system reaches the desired setpoint. At this point the fluid has expanded to its full capacity, and any excess will escape the relief port on the return reservoir.

System Operation

To operate system, follow all startup procedures above. Set the tank pressure to the desired setpoint using the manual pressure regulator on the tank. Make sure 2-way ball valve is open. Set the Atomizing Air pressure to the desired pressure using the regulator on the Air Control Panel. System is now ready to spray.

5.3 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.

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 - Auto-Refill stops filling	380
Q1	RP1	Reset Point 1	Low Level - Auto-Refill 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 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.

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.

SECTION 6

TROUBLESHOOTING AND FAULTS

Troubleshooting can be usually accomplished via the fault messages. Please refer to troubleshooting below, or contact Spraying Systems Co. for further assistance.

Troubleshooting

1. System won't power on
    1) Be sure disconnect is on
    2) Measure power input at the disconnect
    3) Check fuses
2. System does not spray
    1) Check air supply pressure on tank
    2) Check air pressure in tank
    3) Check ball valves at the bottom of the tank
    4) Power to the Spray Control Panel
    5) Check wiring between the Spray Control Panel and the PulsaJet gun(s)
    6) Verify Trigger signal
    7) Fluid may have solidified in supply lines, reconfigure heating supply, or increase temperature.
    8) Check nozzle for clogging.
3. Conditioning Fluid pressure low (less than 10psi)
    1) Air in the system, purge
    2) Check for leaks in the conditioning line circuit, tighten or replace fittings
4. System not heating
    1) Check for power
    2) Check heater selector switch
    3) Check the heating circuit level switch
        —Yellow lights near M12 connector, system should run
        —No lights present: insufficient water in the heating jacket loop or damaged sensor.
    4) Heater faulty, or maximum temperature exceeded, Press the "EZ" button on the heat controller to reset.

SECTION 7

RECOMMENDED MAINTENANCE

CONTROL PANEL

Monthly:

- Check that all indicator lights work. Replace lamps as required.
- Check all ribbon cable connections. Reinsert any partially inserted connectors.
- Check all other cable type connections. Reinsert any partially inserted connectors.

Every 6 Months:

- Retighten all screw terminal connections to insure proper bonding.
- Check all control relays to see that they are properly connected.

Every 12 Months:

- Check calibration of any controls that required calibration. Calibrate as required. See individual control component manuals for calibration procedures.

PNEUMATIC CONNECTIONS

Monthly:

- Check all pneumatic connections for leaks and tighten or replace as needed.
- Check system main air pressure as specified. Adjust to required pressure if necessary.

Every 6 Months:

- Tighten all screw terminal connections to insure proper bonding.

Every 12 Months:

- Check component calibration and re-calibrate if required. See individual control component manuals for calibration procedures.

LIQUID CONTROLS

Monthly:

- 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.
- Check liquid in-line filters and replace with recommended filter mesh size for system.

SPRAY NOZZLES

Daily:

- Check all spray guns for leaks or mechanical malfunctions. Repair or replace as required. See spray gun data sheet for maintenance and repair details.

Monthly:

- Clean, lubricate, and adjust all spray guns. See spray gun data sheet for maintenance and repair details.

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

SECTION 8

SPARE PARTS

Part Number	Description
1/4BBCV-SS10	CHECK VALVE, 303SS
23220-1/4FX1/4F	PLUG VALVE, 23220-1/4FX1/4F PLUG VALVE ASB.BRASS
AA10000-72440T-EPM8	Heated PulsaJet Spray Nozzle - Threaded Connection.
LS00LMT100	Switch, Point level sensor, high frequency capacitance, for water-based media
OR004061T162	O-ring, Square, Buna-N, 70 Duro
160TS16MV0001W5_SU01	Auto-Refill Level Sensor
PL00416TV	VENT, AIR, AUTOMATIC, 1/8" MALE NPT BRASS / BRASS, 115 PSI, 140°- 240°F
FT003133-JT_AC20	20 ft Jacketed Hose
PR00301DFW254D	Pressure, gauge, 0 - 60 psi, stainless steel connection and case, plastic lense, dry case 2-1/2" diameter dial, 1/4" NPT male connection, 200F max
PU00CRI12WASH1P	Pump, Centrifugal, 304SS wetted parts, Wash down motor 1/3HP, 115/230VAC single phase, 3450rpm, 56C, 60hz
CP12290-7-SS	Strainer Screen, 200 Mesh, SS
TE00TM4341	Sensor, temperature, RTD, 1/2" NPT, 150mm tip length, -40...302F range, 316 stainless steel, 4-pin micro DC connector
HT00BEN314S6C2	Heater, 3KW, 230VAC, 2 Alloy 800 elements, 304SS Nut (1-1/4 NPT), 15" Long.
VA00366FCSV	Valve, Manual, 2-Way, 1/2" 316SS.
VA0046495K23_AC01	Valve, Manual Ball Valve, 2-way, Threaded, Jacketed, 316SS.
VAXXEASSBBAFAF0_AC01	Valve, Manual Ball Valve, 3-way, Threaded, Jacketed, 316SS
VA007768K16	Check Valve, 1/4" NPT male x 1/4" NPT male, 1 PSI cracking pressure
VC00110-BC	1/4" Pressure Regulator, 1/4 NPT (female) End Plates, 0-100 PSI
VC003823T321	Regulator - Air/Water - For filling Heating Circuit 0-300 PSI INLET
VA008P014612C2_AC01	Ball Valve, 3-Way, Threaded, 316SS, Air Acctuated with Spring Return, Heated.
VC0098905K15	Valve, Safety Relief, 1/4" NPT, ASME poppet type, 304 stainless steel, 100 PSI
VC00BUDSSVTSS	Valve, Bushing, 1/2"NPTm X 3/8"NPTf connections, 316SS Body/Spring

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