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binks.com/support/resource-library

Or use this QR code with your mobile device:

RM2



Obey local or municipal regulations for product recycling and disposal.

ABOUT THIS MANUAL

ITS PURPOSE

The purpose of this manual is to help you get the most value from your Binks IntelliFlow™ system. It can help you to determine how to install, operate, maintain, and repair your equipment. It provides information and procedures for routine maintenance and servicing and offers diagnostic and repair procedures to follow when trouble occurs.

ITS CONTENTS

This manual is divided into Chapters, each of which is divided into consecutively numbered Sections.

Chapters will contain text, images, tables, or a combination of them.

Pages with images will have paragraphs and sentences with callout numbers that refer to their respective images, steps, and parts.

Procedures, once described in the text, are not normally repeated. When it is necessary to refer to another Chapter or Section, the reference will be given as Chapter and Section number. Cross references given without the use of the word “Chapter” apply to Sections or paragraphs in the current Chapter.

Chapter 02 Table of Contents.

Chapter 03 EU Declaration of Conformity: A mandatory document the manufacturer signs to declare the product complies with the EU requirements.

Chapter 04 Safety: Safety, hazard, and warning rules.

Chapter 05 Servicing: Contains information about servicing and maintaining the RM2.

Chapter 06 Manual Change Summary: Revisions and changes made to this manual.

Chapter 07 Warranty: Your equipment's warranty.

WHO SHOULD USE THIS GUIDE

This guide is intended for users with different levels of knowledge and experience with this system:

Installers: The person(s) who will locate and install this equipment.

Users: The person(s) who will learn how to operate this equipment.

Servicers: The person(s) who will service and maintain this equipment.

This guide assumes all persons who will install, use, operate, and service this equipment have some knowledge of the product and its operating system.

For information on the installation of this equipment, refer to RM2 Installation Manual 77-3153-1.

For information on the operation of this equipment, refer to RM2 Operation Manual 77-3153-2.

For information on the servicing and repair of this equipment, refer to RM2 Service Guide 77-3153-3.

For information on accessory kits and spare parts of this equipment, refer to RM2 Kit Instructions & Spare Parts Manual 77-3153-4.

MANUAL DISCLAIMER

All current and applicable certifications shown in this manual confirm Binks' adherence to the strict standards met to obtain the required regulatory compliances.

This manual was prepared with the most accurate information current at the time of publishing. Binks does not accept responsibility for errors in, or omissions from, the information contained herein.

Please get in touch with your distributor or Binks Customer Service for additional service information and assistance.

RM2 RELATED MANUALS & PUBLICATIONS

Part Number	Description
77-3150	Coriolis Flow Meter
77-3153-1	RM2 Installation Manual
77-3153-2	RM2 Operation Manual
77-3153-4	RM2 Spare Parts Manual
77-3154	Standard Flow Meter
77-3159	Screen Protector Kit
77-3160	Gun Flush Box Kit
77-3166	IntelliFlow Pulse Valve Manual
77-3167	IntelliFlow 300 & 600cc Dispense Pump Manual

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03 EU DECLARATION OF CONFORMITY

Product Description / Object of Declaration:	IntelliFlow RM2	
This Product is designed for use with:	Solvent & Waterbased Materials	
Suitable for use in hazardous area:		
Protection Level:	Not Applicable	
Notified body details and role:	TUV SUD America Inc, 141 14th St NW, New Brighton, MN 55112 USA. Cert Nos NC72170733.1 INTERTEK Testing Services NA, 545 E. Algonquin Rd, Arlington, IL 60005 USA. Cert Nos. 104972588MIN-003, 104972588MIN-002 US/9413/ITS-A1/M2.	
	Low Voltage and EMC Assessment	
This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:	Binks US LLC. 3760 Victoria St N Shoreview, MN 55126. USA	
Representative authorised to compile the technical file	President @. Binks France SAS 5 Place Pierre Semard, 94130 Nogent sur Marne , Paris, France	
EU Declaration of Conformity		
This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:		
Machinery Directive 2006/42/EC EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU RoHS Directive 2011/65/EU by complying with the following statutory documents and harmonised standards: EN 60204-1:2018 Safety of Machinery. Electrical equipment of machines BS EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emissions BS EN 61000-3-3:2013 Electromagnetic compatibility (EMC) - Limits - Limitation for voltage changes, voltage fluctuations, and flicker in public low-voltage supply systems EN 61000-6-2:2005/AC:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments EN 61000-6-4:2007/A1:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments. UL 61010-1:2012 Ed.3+R:2019/CSA C22.2#61010-1-12:2012 Ed.3+U1;U2;A1 Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements UL 61010-2-051:2019 Ed.4/CSA C22.2#61010-2-051:2019 Ed.4 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 2- 051: Particular Requirements for Laboratory Equipment for Mixing and Stirring KS C 9610-6-2:2019 EMC Immunity Testing of Industrial Environments KS C 9610-6-4:2017 EMC Emission Testing of Industrial Environments EN 63000: 2018 Technical documentation for the assessment according to REACH IEC 61010-1:2010+AMD1:2016 Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements. IEC 61010-2-051:2018 Safety requirements for electrical equipment for measurement, control and laboratory use. Particular requirements for laboratory equipment for mixing and stirring FCC 47 CFR Part 15-Radio Frequency Devices, Subpart B – Unintentional Radiators ICES-001, Issue 5:2020 Class A Industrial, Scientific, and Medical (ISM) Equipment		
Providing all conditions of safe use / installation stated within the product manuals have been complied with and also installed in accordance with any applicable local codes of practice.		
Signed for and on behalf of Binks US LLC:	 F. A. Sutter 6-3-25	Executive President: Engineering and Operations, Shoreview, MN, 55126. USA
Document Part No. EN		

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04 SAFETY

04.1 SAFETY PRECAUTIONS

Before the operation, maintenance, or servicing of this Binks system, fully read and understand all technical and safety literature for your product. This manual contains information that is important for you to know and understand.

This information relates to USER SAFETY and the PREVENTION OF EQUIPMENT PROBLEMS.

To help you understand this information, we use recognizable ANSI Z535 and ISO warning boxes and symbols throughout this manual. Please obey these safety sections.

⚠ DANGER

DANGER!: Indicates a hazardous situation that, if not avoided, will result in death or severe injury.

⚠ WARNING

WARNING!: Indicates a hazardous situation that, if not avoided, could result in death or severe injury.

⚠ CAUTION

Caution!: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or equipment damage.

NOTICE

Notice: Indicates information considered important but not hazard related.

SAFETY

Safety: Indicates a type of safety instruction, or a separate panel on a safety placard, where specific safety-related instructions or procedures are described.

Careful study and continued use of this manual will provide a better understanding of the equipment functions and procedures.

This understanding will result in improved operation, efficiency, and longer, trouble-free service with faster and easier troubleshooting. If you need the necessary safety literature for your specific system, contact your local Binks representative or Binks directly.

NOTICE

This manual lists standard specifications and service procedures. Differences can occur between this literature and your equipment.

Differences in local or municipal codes, manufacturer or plant requirements, material delivery requirements, and more can make variations unpreventable. To find these differences, compare this manual to your system installation drawings and other applicable Binks equipment manuals.

⚠ WARNING

The user **MUST** read and be familiar with the Safety Section in this manual and the safety literature therein identified.

Only trained personnel can operate this equipment.

All personnel who operate, clean, or maintain this equipment **MUST** fully read and understand this manual! To operate and service the equipment, follow all **WARNINGS** and safety requirements.

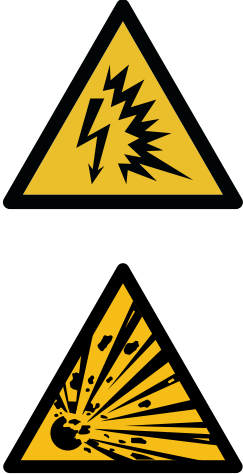
The user must be aware of and adhere to **ALL** local building and fire codes and ordinances, as well as NFPA 33 AND EN 16985 SAFETY STANDARDS, LATEST EDITION, or applicable country safety standards, before the installation, operation, or servicing of this equipment.

⚠ WARNING

The hazards shown on the pages that follow can occur during the normal use of this Binks equipment, but not all listed hazards will be applicable to your product model or equipment.

Repairs may only be performed by personnel authorized by Binks.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Spray Areas  	Fire Hazards Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard. If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion. Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary	Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable. Keep spray areas clean to prevent the build-up of combustible residues. Do not smoke in the spray area. The high voltage supplied to the atomizer must be turned off before the equipment is cleaned, flushed or maintained. Spray booth ventilation must be kept at the rates as set by NFPA-33, OSHA, country, local, and municipal codes. If flammable or combustible solvents are used to clean the equipment, ventilate the area. Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of the output voltage is necessary. Do an equipment test only in areas free of combustible material. The test may necessitate the high voltage to be on, but only as instructed. Non-factory replacement parts or unauthorized equipment modifications can cause a fire or injury. The key switch bypass is used only during setup operation. Do no production work with disabled safety interlocks. Set up and operate the paint procedure and equipment under NFPA-33, NEC, OSHA, local, municipal, country, and European Health and Safety Norms.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Spray Areas 	Explosion Hazard Improper or unsatisfactory operation and maintenance procedures will cause a fire or explosion hazard. If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion. Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary.	Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of output voltage is necessary. Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards. If equipped, set the current overload sensitivity as described in the related section of the equipment manual. If incorrectly set, the current overload sensitivity for protection against accidental arcing is turned off and can cause a fire or explosion. Frequent power supply shutdown indicates a problem in the system, which requires correction. Always turn off the control panel power before the system is flushed, cleaned, or servicing the spray system equipment. Make sure no objects are within the spark-safe work distance before the high voltage is turned on. The control panel must interlock with the ventilation system and conveyor in accordance with NFPA-33, EN 50176. Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable. Do an equipment test only in areas free of combustible material.
General Use and Maintenance 	Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard. Personnel must be correctly trained in the operation and maintenance of this equipment.	Train all personnel in accordance with the requirements of NFPA-33, EN 60079-0. Before equipment operation, personnel must read and understand these instructions and safety precautions. Obey appropriate local, municipal, state, and national codes governing ventilation, fire protection, operation maintenance, and housekeeping. Reference OSHA, NFPA-33, EN Norms, and your insurance company requirements.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Spray Area High Voltage Equipment    	Electrical Discharge This equipment contains a high-voltage device that can cause an electrostatic induction on ungrounded objects. This electrical charge is capable of igniting coating materials. Insufficient ground will cause a spark hazard. A spark can ignite many coating materials and cause a fire or explosion.	Operators in the spray area and the parts to be sprayed must be sufficiently grounded. All conductive objects inside the spray area must be grounded. Hold the parts that get sprayed on conveyors or hangers that are correctly grounded. The resistance between the parts and the earth-ground must not be more than 1 MΩ. Refer to: NFPA-33. Before the equipment is operated, ground all operators. They cannot wear rubber-soled insulated shoes. Wear ground straps on wrists or legs for sufficient ground contact. Operators must not wear or carry ungrounded metal objects. When used, operators must make complete contact with the applicator handle and electrostatic gun. Use conductive gloves or gloves with the palm section cut out. Operators must wear grounded footwear. NOTE: REFER TO NFPA-33 OR SPECIFIC COUNTRY SAFETY CODES FOR GUIDANCE TO CORRECTLY GROUND THE OPERATOR. Except for objects needed for the high-voltage process, all electrically conductive objects in the spray area are to be grounded. Supply a grounded conductive floor in the spray area. Always turn off the applicator voltage before the system is flushed, cleaned, or when servicing the spray system equipment. Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards. Do not install an applicator into a fluid system if the solvent supply is ungrounded. Do not touch an energized applicator electrode.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Spray Areas 	Toxic Fluid or Fumes Toxic fluids or fumes can cause severe injury or death if splashed in the eyes or on the skin, or if inhaled or swallowed.	Read the Safety Data Sheet (SDS) for instructions to know and understand how to handle the specific hazards of the fluids used, and the effects of long-term exposure. During the spray, clean, or servicing of equipment, or when in the work area, keep the work area fully ventilated. Always wear personal protective equipment (PPE) when in the work area or during equipment operation. Refer to the Personal Protective Equipment warnings in this manual. Store hazardous fluid in approved containers and refer to local, municipal, state, and national codes governing the disposal of hazardous fluids.
Spray Area and Equipment Use 	High-pressure fluid sprayed from the gun, hose fittings, or ruptured/damaged components can pierce the skin. While this injury can appear as cut skin, this is a severe injury that can result in the amputation of the affected area.	Do not point or operate the spray gun at the body part of a person. Do not put your hand or fingers over the gun fluid nozzle or fittings in the hose or Proportioner. Do not try to stop or deflect leaks with your hand, glove, body, or shop rag. Do not “blowback” fluid, as the equipment is not an air spray system. Relieve pressure in the supply hoses, Proportioner, and QuickHeat™ hose before the equipment is inspected, cleaned, or serviced. Use the lowest possible pressure to recirculate, purge, or troubleshoot the equipment. Examine the hoses, couplings, and fittings every day. Service or immediately replace parts that leak, are worn, or are damaged. Replace high-pressure hose sections. They cannot be recoupled or serviced.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Equipment and Fluids 	Skin and Clothing Burns Equipment surfaces and fluids can become very hot during operation.	Do not touch hot fluid or equipment during operation. Do not let clothing touch the equipment during operation or immediately after the equipment is stopped. Let the equipment fully cool before the examination or servicing of the component.
Pressurized Aluminum Parts    	The use of certain solvents and chemicals can cause equipment damage and severe personal injury.	Do not use 1,1,1-trichloroethane, methylene chloride or other halogenated hydrocarbon solvents or fluids that contain such solvents. These solvents can cause a severe chemical reaction and equipment rupture that results in equipment and property damage, serious bodily injury, or death.

AREAS Indicate possible hazard occurrences.	HAZARDS Indicate possible hazards.	SAFEGUARDS Prevention of possible hazards.
Spray Areas 	Do Not Touch The effect of paint flow rates and formulations on the quality of atomization can cause the turbines to rotate at high speeds.	Do not use a rag or gloved hand against the bell edge to stop or slow down a bell during rotation. Do not try to clean the bell edge during rotation.

⚠ CAUTION

Only operate the equipment after you have read this section.

04.2 ADDITIONAL SAFETY INFORMATION

The IntelliFlow has an emergency stop (E-Stop) pushbutton on the main operator panel. During an emergency, all operations for the IntelliFlow will halt when the E-Stop is engaged. The operator must disengage the E-Stop and reset the system to recover from this state.

Observe all local or municipal safety measures and wear approved protective equipment when servicing this equipment. Clean all spilled chemicals and materials and do all work in a clean and organized environment to prevent personal injury and equipment damage.

⚠ DANGER

To prevent injury or electrocution while the system is under power, do not contact, disconnect, or manipulate electrical connections or devices. The main disconnect on the right side of the controller can be locked out. Follow the proper Lockout–Tagout (LOTO) procedures for internal controller electrical work.

Only qualified electrical personnel can perform the work if diagnosis and troubleshooting are not possible during working conditions.

⚠ WARNING

To prevent possible chemical spillage when personnel are not on site, air and fluid supplies for the equipment must be disabled when the equipment idles for an extended period, such as an end-of-day shutdown.

NOTICE

During the initial commission of the equipment and at periodic times throughout equipment life, visually examine all fluid fittings for leaks.

Periodically, it is necessary to visually examine all pieces of this equipment for signs of noticeable degradation due to chemicals or other conditions in the equipment's environment.

SAFETY

Obey local or municipal regulations that require installed fire suppression for equipment operation.

If the operation of this equipment, sensors, switches, or other ancillary equipment occurs in the presence of flammable gases and vapors, connect this equipment through intrinsic-safe or Zener barriers. Classify them as a "simple apparatus" or approve them for use in these areas.

05 TROUBLE SHOOTING, SERVICE AND MAINTENANCE

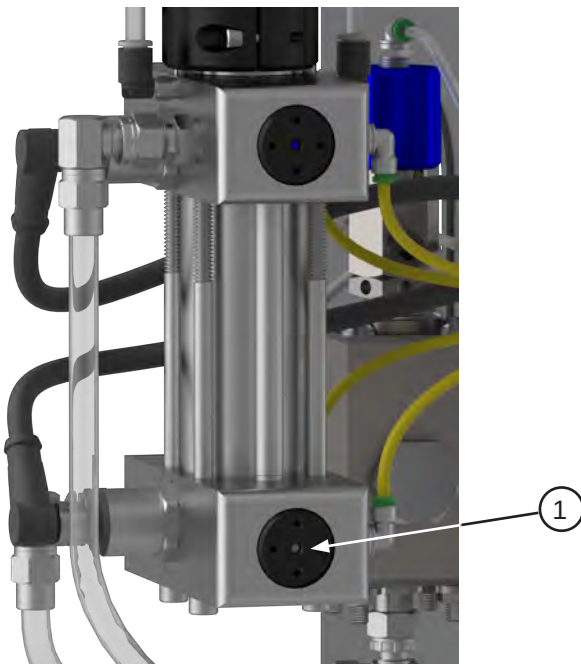
05.1 DISPENSE PUMP OPERATION

NOTICE

The 300 cc and 600 cc dispense pumps operate in the same way.

Material is delivered to the applicator via a piston and cylinder dispense pump. The inlet and outlet valves on each end of the pump control the material flow. When the piston moves down, the bottom inlet valve is closed, and the bottom outlet valve is open.

Open valves are indicated by white dots on the side of the dispense pump (1).



As the piston moves down, the top outlet valve is closed, and the top inlet is open. This action draws material into the top of the cylinder above the piston.

When the piston reaches the bottom of its stroke, the valve settings and piston direction reverse. This action causes the material in the top of the cylinder to be dispensed and the bottom to be filled.

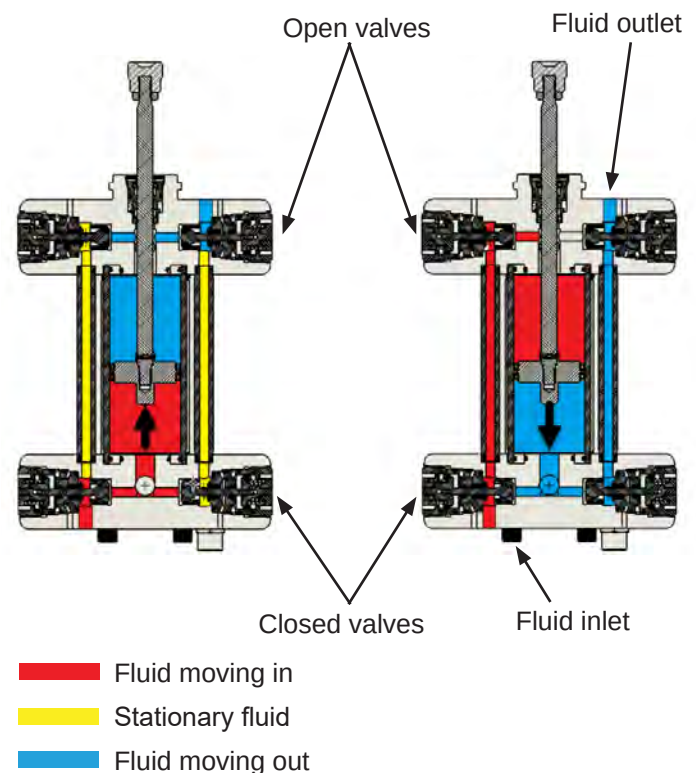
A balancing mechanism programmed into the system controller minimizes pressure fluctuations during piston reversals. This logic assumes that the inlet material pressure is higher than the dispenser output pressure.

When the dispenser reaches the limit of the potentiometer, the inlet valve closes, and the outlet valve opens. This action continues dispensing material on the output side while filling material on the inlet side.

When the inlet side pressure is drawn down to match the output pressure, the direction reverses. The appropriate valves open, and the filling side dispenses.

The dispense pump is fitted with a linear potentiometer with a wiper. The movement of the motor's screw slides the wiper on the potentiometer and communicates the position of the pump piston.

The image below illustrates the dispense pump operation process.



05.2 DISPENSE PUMP OIL RESERVOIRS

The dispense pump has two oil reservoirs (1). They hold a small amount of oil to lubricate the pump shaft seal.

The oil level should be maintained in the center of the clear tubing. A low level may indicate a leak in the shaft seal.

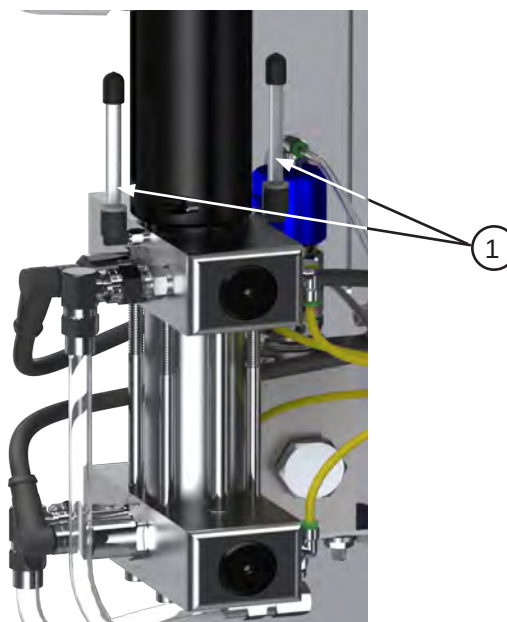
When checking the oil level, check for possible contamination with hardener, which may indicate a leak in the shaft seal.

Refill the reservoirs with DeVilbiss SSL-10 gun oil.

05.3 DISPENSE PUMP TROUBLESHOOTING

Use the table below to identify potential problems with the dispense pump. Avoid unnecessary disassembly.

If the problem is still not corrected after these steps, flush the system with solvent, remove the dispense pump, and clean it thoroughly. Look for clogged passageways and evidence of fluid leaks.



05.3.1 DISPENSE PUMP TROUBLESHOOTING

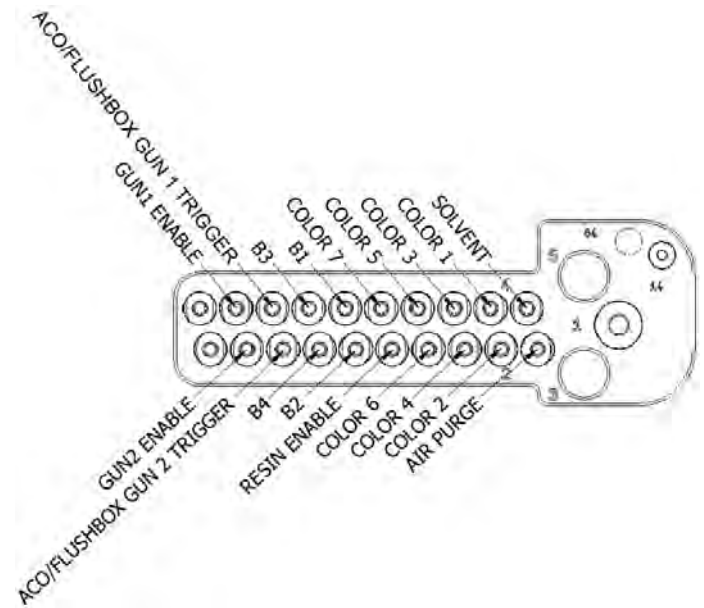
Description	Pass/ Fail
Check that the system is not in the alarm state. An alarm may be causing the pump to stop.	
Verify there are no leaks where fluid enters or leaves the pump.	
Examine the oil reservoirs. Look for overflowing liquid or material in the reservoirs.	
Check for air in all fluid lines. There must be no bubbles anywhere.	
Visually inspect the threaded actuator rod looking for wear or damage. Check the rod for adequate lubrication.	
Verify the ball plunger correctly contacts the linear potentiometer. Observe the center valve change on the dispense pump limits screen during the jog-up or jog-down movement.	
Navigate to the spray screen. Trigger the applicator using the flow override function and dispense pump. Confirm valve operation and look for a constant stream of material exiting the applicator.	
Examine the stepper motor. Verify smooth operation when the pump runs.	
Verify Signal "1A" and Signal "1B" (the top two LEDs on the leftmost card of the I/O block) light up and flash when the material is traveling through the unit.	
Verify the threaded actuator rod is securely connected to the pump piston at the coupling.	

05.4 SOLENOID CONNECTION REFERENCE

05.4.1 LOW-PRESSURE (LP) SYSTEM SOLENOID CONNECTIONS

The image to the right shows the RM2 LP solenoid manifold. Reference the table below to reconnect the solenoid air lines to their bulkhead.

Units that are not fully optioned may not have all 18 solenoids.



05.4.2 LP SOLENOID CONNECTION CHART

Solenoid #	Location	Description	Basic	Optioned
B1	Dispense pump	Top inlet	X	
B2	Dispense pump	Top outlet	X	
B3	Dispense pump	Bottom inlet	X	
B4	Dispense pump	Bottom outlet	X	
Resin Enable	Color stack	Material enable	X	
Air Purge	Color stack	Air enable	X	
Solvent	Color stack	Solvent enable	X	
Color 1	Color stack	Color 1	X	
Color 2	Color stack	Color 2	X	
Color 3	Color stack	Color 3	X	
Color 4	Color stack	Color 4	X	
Color 5	Color stack	Color 5	X	
Color 6	Color stack	Color 6	X	
Color 7	Color stack	Color 7	X	
ACO GUN 1*	ACO valve	Atomization air cutoff for gun 1.	X	
ACO GUN 2*	ACO valve	Atomization air cutoff for gun 2.	X	
GUN1 ENABLE	2-gun manifold	Enable gun 1		X
GUN2 ENABLE	2-gun manifold	Enable gun 2		X

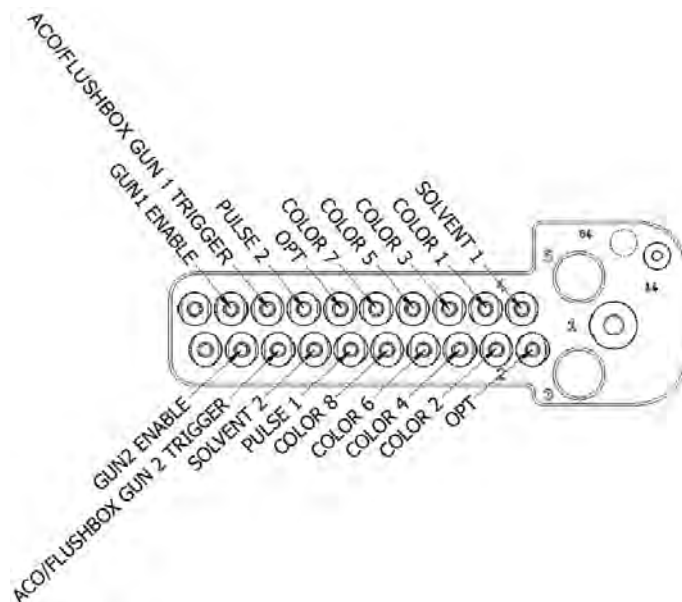
*This solenoid connects to the gun 1 flush box trigger for machines equipped with flush boxes.

*This solenoid connects to the gun 2 flush box trigger for machines equipped with flush boxes.

05.4.3 MEDIUM-PRESSURE (MP) SYSTEM SOLENOID CONNECTIONS

The image to the right shows the MP solenoid manifold. Reference the table below to reconnect the solenoid air lines to their bulkhead.

Units that are not fully optioned may not have all 18 solenoids.



05.4.4 MP SOLENOID CONNECTION CHART

Solenoid #	Location	Description	Basic	Optioned
Pulse 1	CCV pulse valve (left)	Left inlet	X	
Solvent 2	CCV pulse valve (top)	Solvent enable	X	
Pulse 2	CCV pulse valve (right)	Right inlet	X	
Solvent 1	Color stack	Solvent enable	X	
Color 1	Color stack	Color 1	X	
Color 2	Color stack	Color 2	X	
Color 3	Color stack	Color 3	X	
Color 4	Color stack	Color 4	X	
Color 5	Color stack	Color 5	X	
Color 6	Color stack	Color 6	X	
Color 7	Color stack	Color 7	X	
ACO GUN 1*	ACO valve	Atomization air cutoff for gun 1.	X	
ACO GUN 2*	ACO valve	Atomization air cutoff for gun 2.	X	
GUN1 ENABLE	2-gun manifold	Enable applicator 1		X
GUN2 ENABLE	2-gun manifold	Enable applicator 2		X

*This solenoid connects to the gun 1 flush box trigger for machines equipped with flush boxes.

*This solenoid connects to the gun 2 flush box trigger for machines equipped with flush boxes.

05.5 ALARM TROUBLESHOOTING

Alarms indicate potential issues. The following table lists system errors and troubleshooting steps. Refer to 77-3153-1 RM2 Installation Manual for machine schematics.

05.5.1 SYSTEM ERRORS			
Alarm Message	Error #	Alarm Condition(s)	Actions
Inlet Pressure Fault	1	Dispense pump inlet pressure is below user minimum setting.	Confirm component "B" supply valve is open.
			Confirm component "B" supply pressure is correct and matches the spray screen reading.
			Confirm component "B" supply material is present.
			Check the minimum inlet pressure setting on the system settings screen.
			Confirm dispense pump valves function correctly.
			Confirm the main air inlet pressure is 75-100 psi (5-7 bar).
			Confirm solenoids B1-B4 function correctly.
			Confirm the dispense pump transducers function correctly.
Outlet Pressure Fault	2	Dispense pump outlet pressure is greater than the user maximum setting.	Trigger the applicator to relieve pressure.
			Confirm the main air inlet pressure is 75-100 psi (5-7 bar).
			Confirm dispense pump valves function correctly.
			Confirm solenoids B1-B4 function correctly.
			Check for restrictions leading to the mix block.
			Confirm component "B" supply pressure is below the maximum outlet pressure setting on the systems settings screen.
			Remove and inspect the static mix tube.
			Remove and inspect mix block components.
Ratio Alarm	3	The system is unable to maintain the user ratio setpoint.	Check for air in the component "A" supply line.
			Check for air in the component "B" supply line.
			Confirm both components "A" and "B" are flowing.
			Confirm pulse valve is adjusted properly.
			Confirm pulse valve is operating correctly.
			Confirm both flow meters are operating correctly.
			Adjust ratio tolerance in the material ratio screen. Increase as needed or perform an "A"+"B" calibration.

05.5.1 SYSTEM ERRORS

Alarm Message	Error #	Alarm Condition(s)	Actions
Resin Flow Fault	4	Material flow is sensed when there is no trigger signal.	Confirm the resin enable valve is closed.
			Check the resin enable valve for leaks.
			Confirm the flow meter is not detecting pulses.
			Confirm the fluid panel is not vibrating.
			Confirm air flow switches are operating correctly.
Hardener Flow Fault	5	Hardener is not flowing when it should be.	Confirm component "B" supply valve is open.
			Confirm component "B" supply pressure is correct.
			Confirm component "B" has material in the supply line.
			Check the flow transducer cable connection.
			Confirm dispense pump valves function correctly. Opposite valves should be open.
			Confirm solenoids B1-B4 function correctly.
			If the component "B" flow meter is out of adjustment, refer to the flow meter calibration procedure.
Upper Pressure Sensor Fault	6	Upper pressure sensor on the dispense pump is not working correctly.	Check electrical connection and wiring.
			Confirm the upper pressure sensor on the dispense pump functions correctly.
Lower Pressure Sensor Fault	7	Lower pressure sensor on the dispense pump is not working correctly.	Check electrical connection and wiring.
			Confirm if the lower pressure sensor on the dispense pump functions correctly.
Check Pump Fault	8	Dispense pump is unable to move	Check for air in all fluid lines.
			Confirm dispense pump valves function correctly. Opposite valves should be open.
			Confirm solenoids B1-B4 function correctly.
			Perform a pump calibration procedure.
			Check for inadequate dispense pump inlet pressure. Increase to 5-10% greater than outlet pressure.
			Check whether component "A" flow rate is too high for the current ratio.
			Check the calibration screen to confirm the wiper correctly engages with the potentiometer.

05.5.1 SYSTEM ERRORS

Alarm Message	Error #	Alarm Condition(s)	Actions
No Resin Flow Fault	9	Material is not flowing when it should be.	Confirm there are no air leaks in the gun, air flow switch, and air hoses.
			Confirm blow off time is not exceeded.
			Confirm pot life is not exceeded.
			Confirm the resin enable valve is open when the gun is triggered.
			Check connections on the flow meter.
			Check resin enable solenoid.
			Check for stuck flow meter gears.
			Check for low component "A" pressure.
			Confirm component "A" supply pressures and regulators operate correctly.
Upper Balancing Fault	10	After the dispense pump changed direction, the inlet pressure was less than the outlet pressure for longer than 2 seconds while the pump was traveling down.	Check for air at the top of the dispense pump. If air is present, prime component "B".
			Check for excessive dispense pump inlet pressure. If found, reduce to 5-10% greater than the outlet pressure.
			Check for inadequate dispense pump inlet pressure. If found, increase to 5-10% greater than outlet pressure.
			Confirm pressure transducers function correctly.
Lower Balancing Fault	11	After the dispense pump changed direction, the inlet pressure was less than the outlet pressure for longer than 2 seconds while the pump was traveling up.	Check for air in the bottom of the dispense pump. If air is present, do a component "B" prime.
			Check for excessive dispense pump inlet pressure. If present, reduce to 5-10% greater than the outlet pressure.
			Check for inadequate dispense pump inlet pressure. If found, increase to 5-10% greater than outlet pressure.
			Confirm pressure transducers function correctly.
Pot Life	12	Pot life has expired	Perform a system flush or color change.
Color Change Fault	13	Color change sequence wasn't completed successfully.	Check HMI for other alarms.
			Confirm the stop button was not pressed.
			Confirm atomization air is not detected during the color change.
			If gun flush boxes are equipped, confirm guns are in the boxes and the lids are closed.
			If gun flush boxes are equipped, confirm proper operation.
High Resin Flow Fault	14	Component "A" flow rate is higher than the user limit setting.	Check for air in the fluid lines to the color stack valve.
			Confirm there are no leaks in the fluid lines.
			Verify the max component "A" flow rate in system settings.
			Adjust the fluid pressure and or flow to the color stack valve to ensure the limit is not exceeded.

05.5.1 SYSTEM ERRORS

Alarm Message	Error #	Alarm Condition(s)	Actions
Component "B" Flow Fault	15	Component "B" flow is detected when the pump is not moving.	Check component "B" supply for fluid leaks.
			Confirm component "B" supply valve is open and supply adequate.
			Confirm component "B" pressure is correct.
			Adjust the flow sensor so the display returns to a red signal after the gun trigger stops.
			Adjust the flow sensor at a minimum flow rate so the display moves off the red signal.
			Confirm dispense pump valves correctly function. Opposite valves should be open.
			Confirm solenoids B1-B4 function correctly.
Air Flow Detected	16	The airflow switch is turned on during a color change when no air flow should be present.	Turn off atomization air during the color change or flush.
			Check the operation of the airflow switch(es).
			Check operation of gun flush boxes (if equipped).
			Verify operation of air cut off valves (if equipped).
Ethercat Error	17	Communication problem between the HMI and the Ethercat input/output modules.	Cycle power to the RM2.
			Verify the correct system type is selected in the system configuration.
			Check cables between the HMI and the I/O block.
E-Stop Error	18	Emergency stop button is pushed.	Pull out the emergency stop button on the front of the machine.
			Press the reset button on the system control.
Pump Position Sensor Error	19	Pump position sensor is reading lower than the minimum possible position.	Check the sensor for proper operation.
			Check the calibration screen to confirm that the wiper correctly engages with the potentiometer.
Max Pressure Fault	20	Inlet or outlet pressure sensors have detected more than 250 psi or 145 psi when the pump flow sensor was installed.	Check for restrictions after the dispense pump outlet blocking fluid flow.
			Check atomization air flow switches to ensure there are no errors in the readings.
			Check for leaks in the component "A" material circuit.
			Verify the maximum system pressure settings in the system configuration screen are correct.
Not used	21	-	-
Low Hardener Flow	22	Hardener flow rate is lower than expected.	Check hardener supply valve.
			Check hardener supply pressure.
			Check pulse valve adjustment.
			Check pulse valve operation.

05.5.1 SYSTEM ERRORS

Alarm Message	Error #	Alarm Condition(s)	Actions
High Hardener Flow	23	Hardener flow rate is higher than high flow setpoint.	Verify hardener supply pressure is not too high.
			Check pulse valve operation.
			Increase maximum hardener flow rate setpoint in system settings.
Invalid Hardware Configuration	30	Only applicable for the RM2 MP system. Solvent flow meter is enabled but not connected or connected but not enabled.	Reconfigure system configuration.

Most warnings displayed on the alarm screen have the same number, alarm condition(s), and action(s) as the errors listed in 05.5.1 System Errors.

The following table lists the warnings with different alarm condition(s) and action(s).

05.5.2 SYSTEM WARNINGS

Alarm Message	Warning #	Alarm Condition(s)	Action(s)
Pot Life	12	Pot life timer has expired.	Flush mixed material from fluid lines with a solvent flush on the color change screen. Flushing the system will automatically reset the alarm and resolve the warning.
Auto Purge Occurred	21	Pot life has expired and the system performed an automatic flush.	For information only. Select reset on the alarms screen to resolve.
Color Change Not Ready	30	User attempted to perform a color change but the flush box was open or no gun was in the box.	For information only. Select reset on the alarms screen to resolve.
Color Change Timeout	31	Color change took longer than 5 times to complete and no flow was detected during that time.	For information only. Select reset on the alarms screen to resolve.
Color Change Stopped By User	32	Color change is stopped by the user by pressing the stop button.	For information only. Select reset on the alarms screen to resolve.

05.6 FLOW METER TROUBLESHOOTING

Flow meter problems can be caused by improperly filtered fluid. Particulate in the fluid can bind gears, resulting in inaccurate flow rate signals.

Maintain the fluid filters according to the instructions from the filter manufacturer.

If you repeatedly need to disassemble and clean the flow meter to remove solids and particulates, inspect the entire fluid supply system and evaluate the system cleaning cycle. Refer to manual 77-3153-4 for parts lists and component views.

Fluid backup (reverse flow) can cause mixed material to enter the flow meter. The flow meter should be cleaned immediately before the fluid gels or hardens.

Under normal operation, the sensors or electrical connections will not require replacement.

NOTICE

The fiber optic pickup sensor (PN 310-9012) contains a battery with a 15-month lifespan starting at the assembly date of your IntelliFlow system. For correct signal readings, replace this battery every 15 months.

05.7 MAINTENANCE BEST PRACTICES

- Keep the control enclosure door shut to ensure the components do not require cleaning. If material leaks into the enclosure, correct the problem and clean the work area.
- Clean the system with a complete flushing procedure at the end of operations to avoid materials hardening within the fluid lines.

05.7.1 CLEAN HOSES

- Ensure gun 1 and gun 2 flush sequences are correct. The right flush sequences help the mixed material line(s) remain clean and ready for the next use.
- Always finish spraying operations with a flush load to remove all air from the fluid lines.
- If you use a 2K material that greatly exceeds pot life:
 - Replace the static mixer and mixed material hose.
 - Disassemble and clean the mix block.

05.7.2 MAINTAIN COLOR CHANGE VALVES

- Check color change valves (CCVs) for proper operation regularly.
- If a CCV has not been used for a prolonged period, remove the valve and clean the fluid passages. Component "A" material may collect inside the valve

or manifold passages.

- If the valves do not operate properly or fluid leaks occur, the valve must be repaired.

05.7.3 MAINTAIN FLOW METERS

- Inspect the flow meter for proper operation if the flow rate graph or dispense pump movement (LP only) appears erratic. Solidified component "A" material may collect in and around the gears, bearings, and shafts, interfering with the motion of the gears and resulting in incorrect flow measurement.
- Using abrasive or pigmented fluids will lead to wear, which can create inaccurate flow meter readings. Routinely calibrate the flow meter for all colors used with the system.

05.7.4 CLEAN THE CONTROL ENCLOSURE EXTERIOR AND TOUCHSCREEN

- Clean the control enclosure's exterior painted surfaces with a soft, damp cloth and a mild, non-abrasive household cleaner.
- Do not use solvents to clean the touchscreen display.
- If the machine is housed where touchscreen contamination is possible, use disposable screen protectors (PN 240-5143).

05.8 PREVENTATIVE MAINTENANCE

The RM2 requires periodic inspection and regular maintenance. Use table below to guide when to perform routine maintenance tasks.

The preventative maintenance intervals are recommendations and depend largely on the material being sprayed and frequency of use.

NOTICE

Reactive material properties vary. If material blockage occurs to any component, adjust the maintenance schedule accordingly.

05.8.1 MAINTENANCE INTERVALS

Frequency	Description	Inspection Method
Daily	Flush system with solvent.	Visual
Daily	Examine for leaks.	Visual
Daily	Review alarm history.	Visual
Daily	Ensure sufficient material supply.	Visual
Monthly	Check pump oil reservoirs (LP only).	Visual
Monthly	Examine electrical and mechanical components for degradation from environmental factors.	Visual
Monthly	Examine static mixer for clogs.	Visual
Monthly	Examine all hoses for kinks and wear.	Visual
Monthly	Perform flow meter calibration check.	Test with beaker
Monthly	Check CCV operation.	Disassemble
Monthly	Check pulse valve operation.	Disassemble
Monthly	Clean mix block and check valves.	Disassemble
Monthly	Examine fluid hoses for material buildup.	Disassemble
As needed	Clean flow meter.	Disassemble
As needed	Verify dispense pump moves freely (LP only).	Visual
As needed	Rebuild CCVs.	Disassemble
As needed	Replace static mixer assembly.	Disassemble

05.9 DAILY/EACH SHIFT PREVENTATIVE MAINTENANCE TASKS

- Ensure mixed material is properly flushed at the end of the shift. Verify that there are no air pockets in the fluid lines.
- Identify and correct air and fluid leaks in the system, including fluid hoses, flow meters, dispense pump, and mix block.
- Ensure the gun functions correctly and air does not leak from the air valve.
- Verify that issues displayed in the alarm screen have been corrected.
- Ensure material supplies are filled and pressure measurements are correct.

05.10 MONTHLY PREVENTATIVE MAINTENANCE TASKS

- Examine the static mixer assembly at the mix block outlet.
 - If the static mixer elements are clogged, replace the static mixer as needed.
 - Balancing alarms or an increase in outlet pressure indicates blockage.
- For LP systems, complete the following dispense pump maintenance tasks:
 - Ensure the dispense pump oil reservoirs have no hardener or contamination.
 - Check the dispense pump oil gauges.
If the levels have dropped below the lower edge of the reservoirs, oil must be added to the pump.
Before adding oil, check for leaks.
If there are leaks, contact Binks for assistance.
Do not attempt to fix leaks without contacting your representative
 - Ensure sufficient lubricant in the dispense pump.
 - Perform "A"+"B" calibration to ensure the flow meter and dispense pump operate correctly.
- Examine air and fluid lines for kinks, cuts, and wear.
- Ensure CCVs open and close properly. Remove valves and clean them if needed.
- Ensure the pulse valve opens and closes properly. Remove the pulse valve and clean it if needed.
- Disassemble and clean the mix block.
- Disassemble valves and examine for debris. Clean if needed.

- Examine fluid hoses for material buildup.
 - Material buildup is common around hose fittings on 2K material and can contaminate finished products.
 - Replace hoses if needed.

05.11 AS NEEDED PREVENTATIVE MAINTENANCE TASKS

- Rebuild the mix block and replace O-rings and parts in the injector valve assembly.
- Clean and reassemble the flow meter.
- For LP systems, rebuild the dispense pump if:
 - Component "B" material leaks from the oil reservoirs.
 - Component "A" calibration is correct, but "A"+"B" calibration is inaccurate.
- Rebuild CCVs if you notice air leakage or delayed trigger response time.
- Rebuild the pulse valve if you notice air leakage or delayed trigger response time.
- Examine flow meters for excessive wear or buildup of material.
- For LP systems:
 - Verify smooth dispense pump movement.
 - Set the dispense pump limits and perform calibration.

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MANUAL CHANGE SUMMARY

Date	Description	Version
08/2024	1st Draft. Split manual into multiple sections, put into new format, and restarted at Rev 1.0	R1.0
05/2025	Updated manual to latest Binks standards.	R2.0

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WARRANTY POLICY

This product is covered by Binks' materials and workmanship limited warranty.

The use of parts or accessories from sources other than Binks will void all warranties. Failure to follow reasonable maintenance guidance provided can invalidate the warranty.

For specific warranty information, please contact Binks.

For technical assistance or to locate an authorized distributor, contact one of our international sales and customer support locations listed below.

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WARRANTY PAGE





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