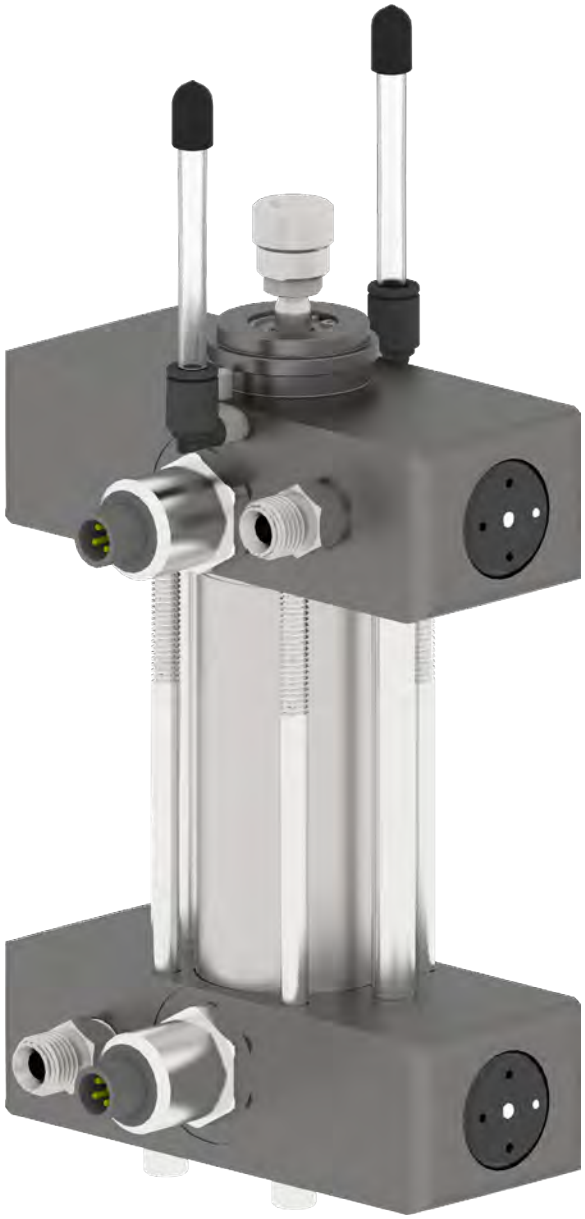
Binks®

INSTALLATION MANUAL EN

77-3167



Binks

IntelliFlow Dispense Pump

For additional information or copies of your service manual, please visit us online at:

binks.com/en/library

Or use this QR code with your mobile device:

RF2+

RF2

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. Safety - Safety, hazard, and warning rules.

Chapter 04. Introduction - Basic introduction of the dispense pump.

Chapter 05. Servicing - Instructions on the servicing of the dispense pump.

Chapter 06. Maintenance - Dispense pump maintenance instructions.

Chapter 07. Manual Change Summary - The revisions and changes made to this manual.

Chapter 08. 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.

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.

DISPENSE PUMP RELATED MANUALS & PUBLICATIONS	
Part Number	Description
77-3153-1	RM2 Installation Manual
77-3153-3	RM2 Service Manual
77-3161-1	RE1 Installation Manual
77-3161-3	RE1 Service Manual
77-3165-1	RF2+ Installation Manual
77-3165-3	RF2+ Service Guide

02. CONTENTS

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03 SAFETY

03.1 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.

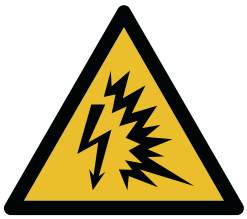
The user must be aware of and adhere to ALL local building and fire codes and ordinances, as well as NFPA 33 AND EN 16985 SAFETY STANDARDS, LATEST EDITION, or applicable country safety standards, before the installation, operation, or servicing of this equipment.

⚠ 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.

03.2 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.

04. INTRODUCTION

The Intelliflow™ dispense pump uses an electronically controlled stepper motor equipped with an integral linear actuator to control material flow. The pump is available in both 300 cc and 600 cc sizes, which operate in the same way.

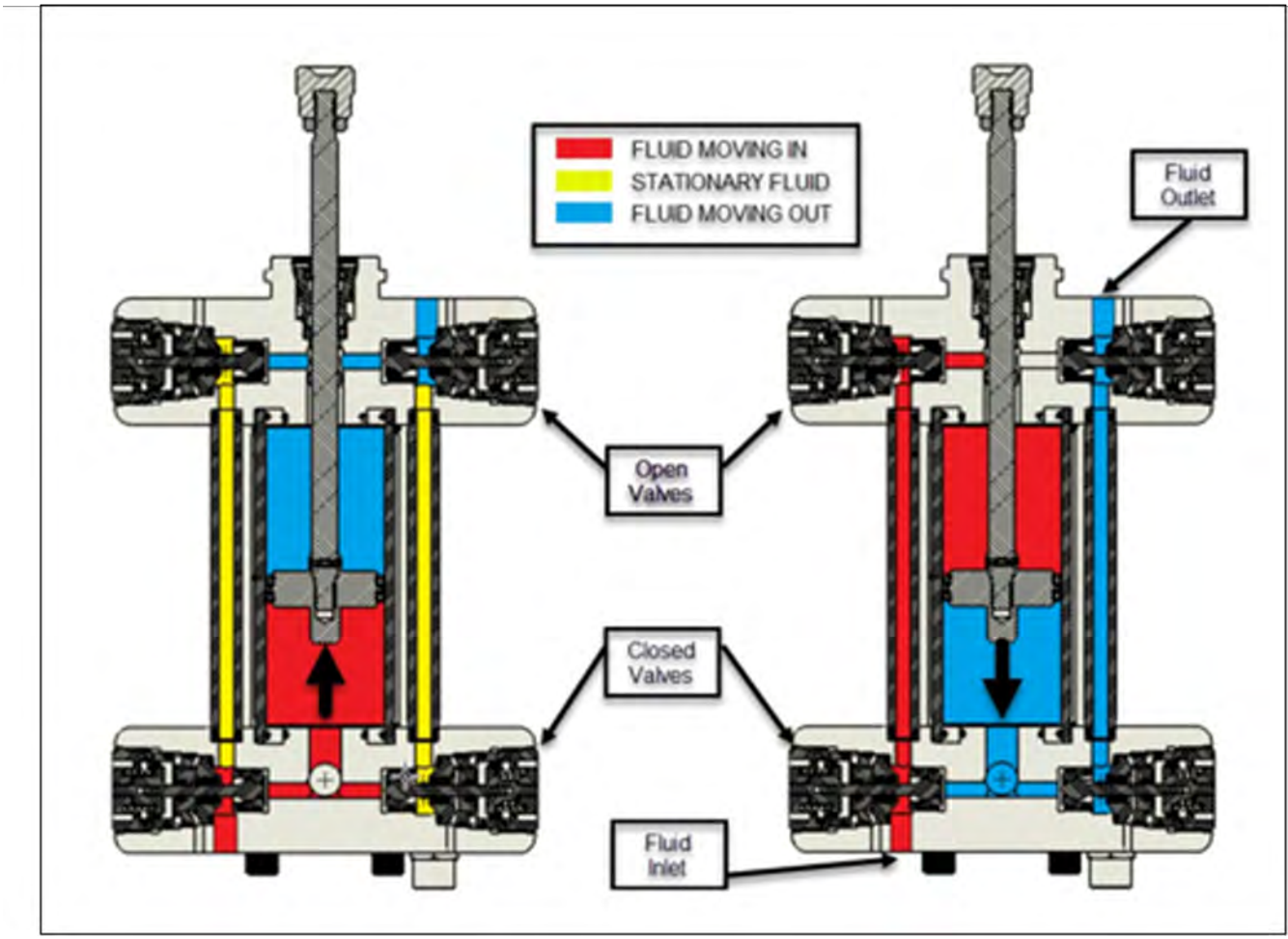
Inlet and outlet valves on each end of the pump control material flow. Open valves are indicated by small protrusions that appear white on the side of the dispense pump.

As the pump 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, dispensing the material in the top of the cylinder and filling the bottom.

A balancing mechanism programmed into the system controller minimizes pressure fluctuations during piston reversals. This logic assumes that the inlet material pressure exceeds 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.

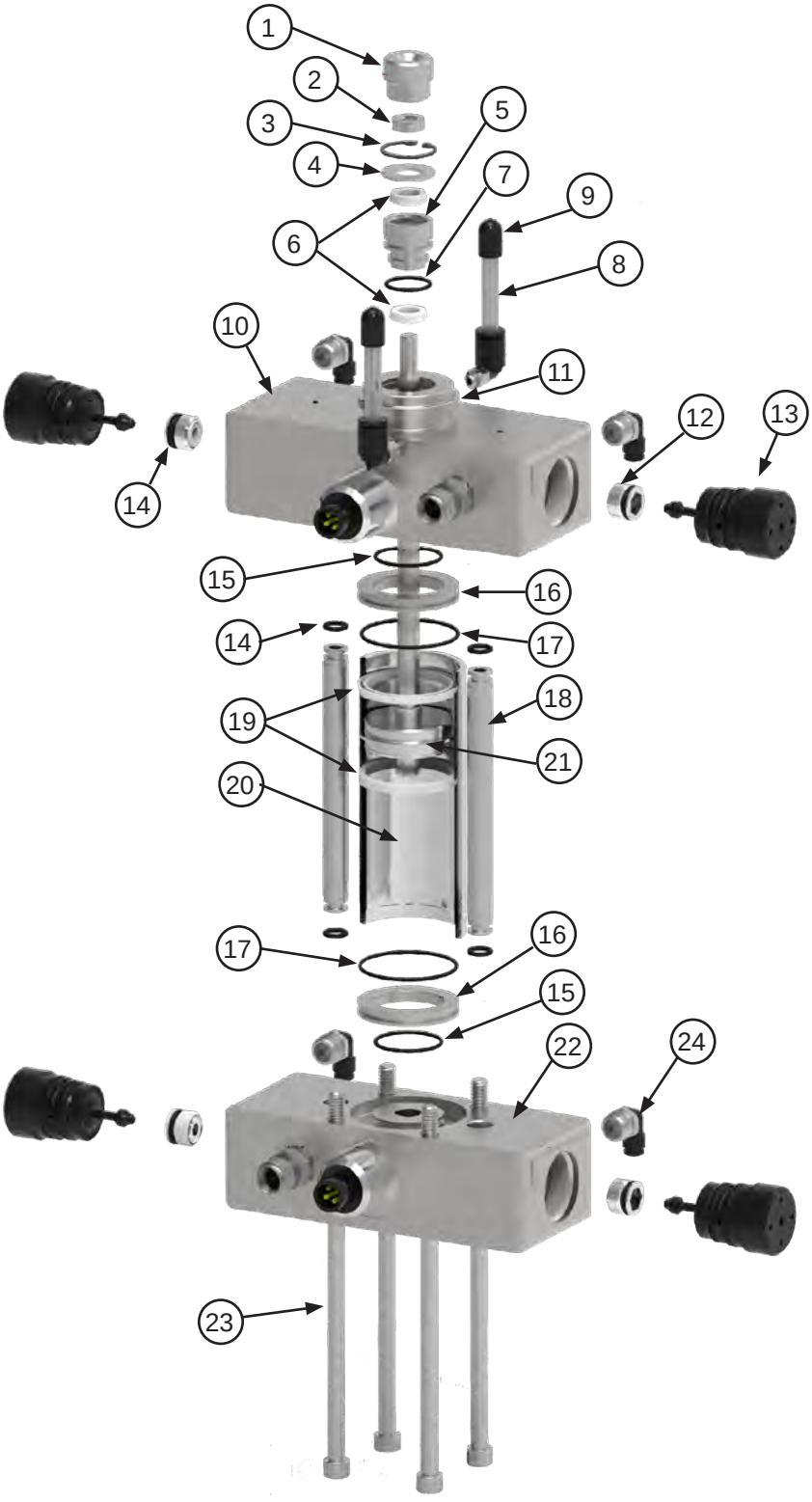
The dispense pump is fitted with a linear potentiometer with a wiper, both located within the machine control enclosure. The movement of the motor's screw slides the wiper on the potentiometer and communicates the position of the pump piston.

The dispense pump has two oil reservoirs, which 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.



04.1 DISPENSE PUMP SPECIFICATIONS	
Pressure	Rating
Maximum Fluid Pressure	300 PSI
Ports	Thread Sizes
Top Elbows	#10-32
Inlet and Outlet	¼ NPT
Pneumatic Elbows	1/8 NPT
Pressure Sensor	7/16-20 UNF-2B (SAE-4)
Socket Head Cap Screws	¼-20 UNC-2B
Injector Thread	1”-12 UNF-2B

04.2 DISPENSE PUMP PARTS LIST



Dispense Pump Spare Parts List				
Item	Part Number	Description	Qty	Notes
1	240-3020	Pump Rod Adapter	1	
2	20-6953	Hex (Jam) Nut	1	
3	237-729	Retaining Ring (Snap Ring)	1	
4	237-727	Flat Washer	1	
5	240-3221	Seal Holder	1	
5	240-3222	Rod Guide (within Seal Holder)	1	
6	240-3211	Rod Seal	2	
7	79001-09	O-Ring, 2-015, solvent proof	1	
8	FEP-0403	Teflon Paint Hose, 1/4" OD x 3/16" ID, 210 psi wp	2	
9	240-3102	1/4" ODT Cap	2	
10	240-5133	Top Block	1	
11	20-4844	Dowel Pin, 3/16 DIA x ½ LONG, SS	2	
12	77367-00	Microvalve (MCV) Seat Assembly	4	
13	78949-00	Microvalve (MCV) Assembly	4	
14	79001-05	O-Ring, 2-010, KALREZ	4	
15	79001-21	O-Ring, 2-020, Perfluoroelastomer	2	
16	240-3022	Cylinder Adapter	2	**
17	79001-18	O-Ring, 2-027, Perfluoroelastomer	2	**
18	240-5135	Fluid Tube	2	
19	240-3212-300 240-3212-600	300 cc Piston Seal 600 cc Piston Seal	2	
20	240-3018-300 240-3018-600	300 cc Cylinder 600 cc Cylinder	2	
21	240-3224-300 240-3224-600	300 cc Rod and Piston Assembly 600 cc Rod and Piston Assembly	1	
22	240-5132	Bottom Block	1	
23	7959-176C	Socket Head Cap Screw, ¼-20 x 5.5” LG, 18-8	4	14.0 N•m (10 lb-ft)
24	35-5735	Fitting, 90 swivel 5/32t x 1/8 NPTM Coated Thread	4	
—	0114-016099	Pump Packing Lube, 250 mL	1	

**600 cc dispense pump only

05. DISPENSE PUMP SERVICING

05.1 GENERAL TIPS

1. Work from a clean, dry bench.
2. Use only lint-free wipes or cloths for cleaning.
3. Refer to the model number of the dispense pump when ordering replacement parts.

05.2 GENERAL TROUBLESHOOTING

Follow these steps to identify potential problems with the dispense pump. Avoid unnecessary disassembly.

1. Check that the system is not in the alarm state. An alarm may be causing the pump to stop.
2. Verify there are no leaks where fluid enters or leaves the pump.
3. Examine oil reserves. Look for overflowing liquid or material in the reservoir.
4. Check for air in all fluid lines. There must be no bubbles anywhere.
5. Visually inspect the threaded actuator rod, looking for wear or damage. Check the rod for adequate lubrication.
6. Verify that the ball plunger correctly contacts the linear potentiometer. Observe the center valve change on the dispense pump limits screen during the jog-up or job-down movement.
7. Trigger the spray gun into a grounded metal waste container. Confirm valve operation and look for a constant stream of material exiting the gun.
8. Examine the stepper motor. Verify smooth operation when the pump runs.
9. Verify that 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 travels through the unit.
10. Verify that the threaded actuator is securely connected to the pump piston at the coupling.

05.3 PREVENTATIVE MAINTENANCE

05.3.1 DAILY MAINTENANCE

Examine the dispense pump for air and fluid leaks.

05.3.2 MONTHLY MAINTENANCE

1. Ensure the dispense pump oil reservoirs have no hardener or contamination. This may indicate a leak in the shaft seal.
2. Check pump oil gauges. A low level may indicate a leak in the shaft seal.
   - 2.1. If the levels have dropped below the lower edge of the reservoirs, oil must be added to the pump.
   - 2.2. Before adding oil, check for leaks.
   - 2.3. If there are leaks, contact Binks for assistance.
   - 2.4. Refill the reservoirs with DeVilbiss SSL-10 gun oil.
3. Ensure sufficient lubrication in the dispense pump.

05.3.3 AS NEEDED MAINTENANCE

1. Verify dispense pump runs smoothly.
2. Reset limits for the dispense pump using the pump setup screen. Refer to the manual for your RE1, RM2, RF2, or RF2+ machine for these instructions.

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06. MAINTENANCE

This chapter contains procedures for disassembly, inspection, and assembly of the dispense pump.

The following tools and supplies are required to perform maintenance on the dispense pump:

- 5/16” Allen wrench
- 3/16” Allen wrench
- 4 mm Allen wrench
- 11 mm wrench
- 13 mm wrench
- 21 mm wrench
- Adjustable wrench
- Mallet
- Snap ring pliers
- Plastic pry tool
- Seal puller or hook for removing O-rings
- Screwdriver
- Q-tips
- Multi-purpose synthetic grease, such as Mesamoll®
- DeVilbiss SSL-10 gun oil

06.1 PRELIMINARY PROCEDURES

Before removing the dispense pump for service or repair, perform the following procedure:

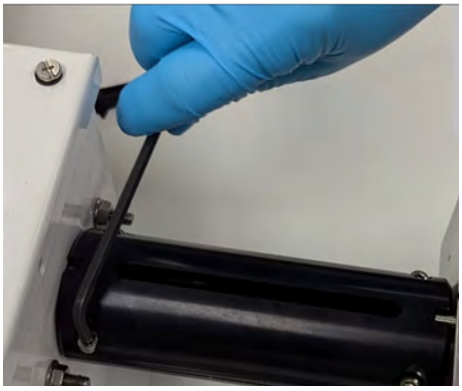
1. Flush the dispense pump. Do not refill with solvent.
2. If equipped, close the shut-off valves on the dispense pump.
3. Turn off pneumatic air (if using).
4. Turn off power.
5. Place a container nearby for collecting oil or other liquid that may come out of the pump during disassembly.
6. Unscrew the inlet and outlet hose connections from the dispense pump.
7. Remove the pressure sensors from the dispense pump.

⚠ CAUTION

Turn off power before removing the dispense pump for service or repair.

06.2 DISPENSE PUMP REMOVAL

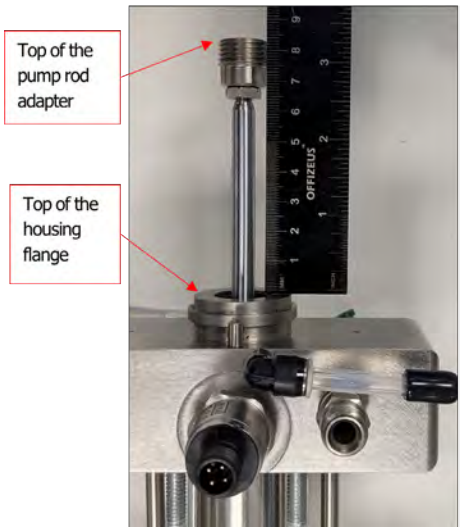
1. Using a 4 mm Allen wrench, unscrew the four bolts holding the coupling.



2. Remove the bolts.
3. Pry open the two halves of the coupling using a screwdriver.
4. Remove coupling.
5. Place a 21 mm wrench on the coupler that attaches the dispense pump to the machine and a 13 mm wrench on the pump rod adapter.
   5.1. Pull the wrenches inward (toward each other) to loosen the components.

   5.2. Once the components are loosened, unscrew the pump rod adapter.

6. Measure the distance between the top of the pump rod adapter (item 1) and the top of the housing flange.



6.1. Record the measurement for later use. This example is approximately 8.4 mm.

6.2. The measurement is the length the pump rod must be positioned during installation for the coupling to fit.

NOTICE

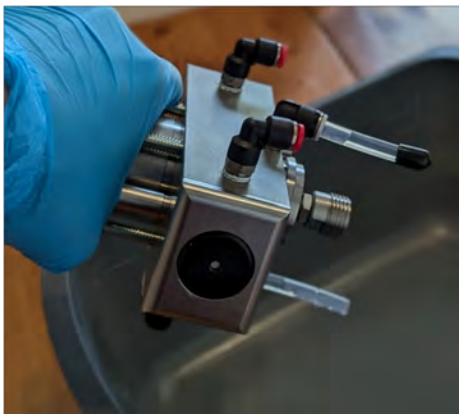
Keep a record of the length between the top of the pump rod adapter and the top of the housing flange for later use.

06.3 DISPENSE PUMP DISASSEMBLY

1. Drain the fluid from inside the dispense pump.

1.1. Remove oil gauge caps (item 9)

1.2. Tip the pump toward the open oil gauge tubing (item 8) and pour the oil into a waterproof waste container.



1.3. Dispense pumps typically contain approximately 12 oz of oil. However, the oil is dispersed throughout the pump.

NOTICE

Some oil will drip out as components are removed.

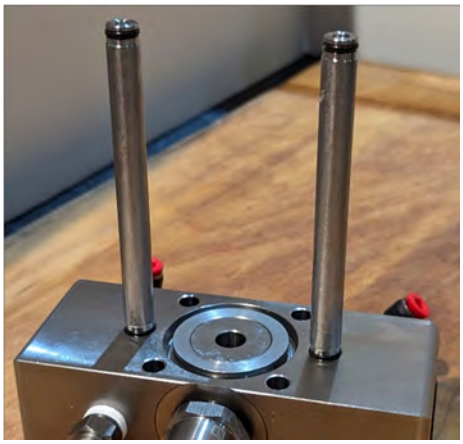
2. Detach the bottom block (item 22) from the top block (item 10).

2.1. Using a 3/16” Allen wrench, turn one socket head cap screw (item 23) counterclockwise to loosen it from the bottom block.

2.2. Loosen the remaining three screws and then unscrew them completely by hand.

2.3. Remove the bottom block.

3. Pull the fluid tubes (item 18) out of their grooves in the bottom block.



4. Remove the pump rod adapter (item 1) and hex jam nut (item 2).
   4.1. Secure an 11 mm wrench to the jam nut and a 13 mm wrench to the pump rod adapter.
   4.2. Holding the jam nut still, turn the pump rod adapter counterclockwise to loosen the pieces.

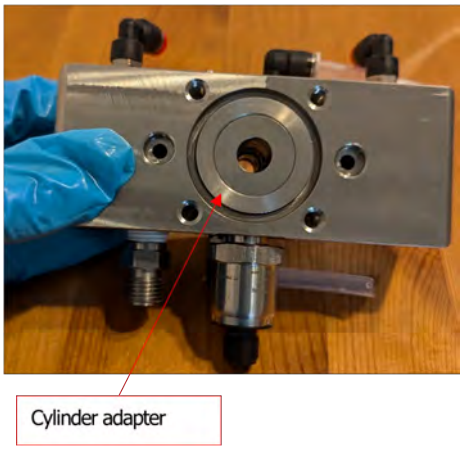
   4.3. Unscrew the pump rod adapter.
   4.4. Secure the end of the pump rod assembly visible from the bottom of the cylinder (item 20) with an adjustable crescent wrench. Carefully hold the rod assembly in place.
   4.5. Using a 11 mm wrench, turn the jam nut counterclockwise to loosen it.
   4.6. Unscrew the jam nut.

5. Remove the piston assembly (item 21) and cylinder (item 20) from the top block (item 10).
   5.1. Remove the cylinder from the top block.
   5.2. Carefully but firmly push the piston assembly from the cylinder.
6. 600 cc dispense pump only: Remove cylinder adapters (item 16) from the top block (item 10) and bottom block (item 22).

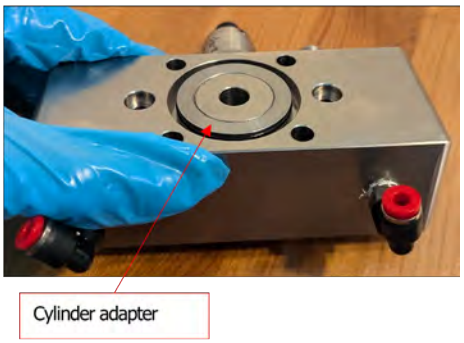
6.1. Remove the cylinder adapter from the bottom of the top block.

6.2. Remove the cylinder adapter from the top of the bottom block.

7. Remove the flat washer (item 4) and the snap ring (item 3) from the top block.

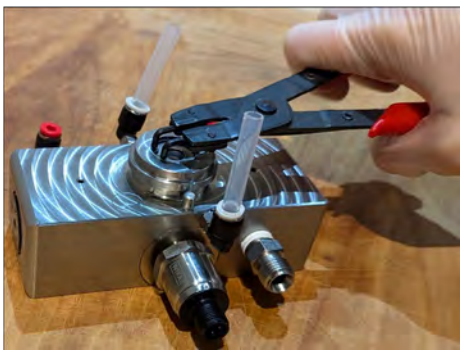


7.1. Using the snap ring pliers, pinch the snap ring to reduce its size.

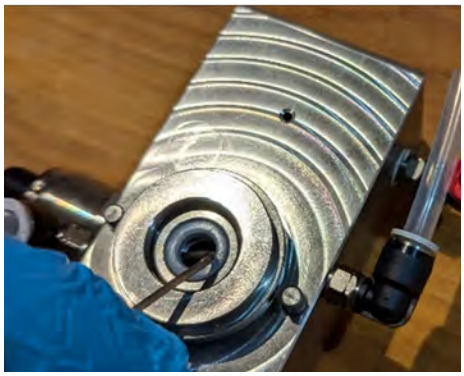


7.2. Remove the snap ring from the top block.

7.3. Remove the flat washer.



7.4. Remove the rod seal (item 6) beneath the flat washer.

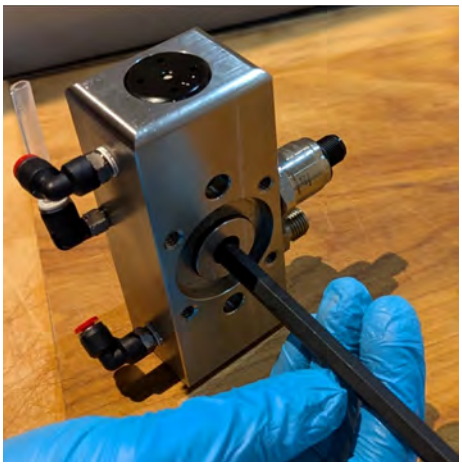


8. Remove the seal holder assembly from the top block.

8.1. Insert a 5/16” Allen wrench into the bottom of the top block.

8.2. Carefully push the seal holder assembly from the block.

8.3. Remove the second rod seal (item 6) from the seal holder assembly.



⚠ CAUTION

Avoid using sharp or pointy tools to remove the seal holder assembly from the dispense pump. The seal holder assembly may not function as intended if damaged.

9. Remove the four MCV assemblies (item 13) and MCV seat assemblies (item 12) from the ports on the sides of the top and bottom blocks.
   9.1. Insert the MCV tool into the indentations on an MCV assembly.

   9.2. Secure an adjustable wrench to the MCV tool.
   9.3. Loosen the MCV assembly by turning the wrench counterclockwise.

   9.4. Remove the assembly from the port.
   9.5. Insert the back of a 5/16” Allen wrench in the MCV port.
   9.6. Loosen the seat assembly by turning the wrench counterclockwise.

   9.7. Remove the seat assembly from the port.
   9.8. Repeat the procedure for the remaining three MCV assemblies and MCV seat assemblies.

06.4 INSPECTION

1. Inspect the piston assembly for signs of wear, such as grooves or etching.
2. Replace the piston seal if broken or worn.
   2.1. Remove the top and bottom piston seal (item 19) using a plastic pry tool.
   2.2. Place replacement seal rings around the piston assembly (item 21).

NOTICE

Ensure the metal tabs on the replacement seal rings face each other upon installation to complete the seal.

   2.2.1. Slide the top piston seal ring over the top of the piston assembly. Ensure the tabbed side faces down.
   2.2.2. Slide the bottom piston seal ring over the bottom of the piston assembly. Ensure the tabbed side faces up.
   2.2.3. Clasp the rings together.

⚠ CAUTION

Avoid damaging the metal tabs on the piston seal components.

   2.3. 300 cc dispense pump only: Once the piston seal is attached, roll the seal's edges on the table to help minimize its size. This ensures the piston assembly can fit into the 300 cc cylinder.
3. Inspect dispense pump components for debris, damage, and wear.
   3.1. Include dowel pins (item 11), MCV assemblies (item 13), and MCV seat assemblies (item 12) in the inspection.

   3.2. If MCV assemblies or seat assemblies are damaged, order a new set. The spare parts kit does not include these parts.
4. Inspect O-rings for rips, tears, distortion, and signs of chemical damage (e.g., discoloration or swelling).

5. Replace damaged O-rings as needed. The following steps include replacing all O-rings, which may not be necessary for every dispense pump inspection.

NOTICE

Replace damaged O-rings. Not all O-rings must be replaced unless they are all damaged.

NOTICE

Ensure the o-ring stays in the grooved boundary.

5.1. Replace the O-ring on the seal holder (item 5).

5.1.1. Remove the damaged O-ring using a seal puller or hook.

5.1.2. Grease the O-ring groove on the seal holder.

5.1.3. Apply a new 2-015, solvent-proof O-ring (item 7).

5.2. Replace any damaged O-rings on the fluid tubes (item 18).

5.2.1. Remove the damaged O-ring using a seal puller or hook.

5.2.2. Grease the O-ring groove on the fluid tube.

5.2.3. Apply a new 2-010, KALREZ O-ring (item 14) to the fluid tube.

5.2.4. Repeat for any other damaged O-rings on the fluid tubes.

5.3. 600 cc dispense pump only: Replace damaged o-rings on the cylinder adapters (item 16).

5.3.1. Remove the damaged O-ring using a seal puller or hook.

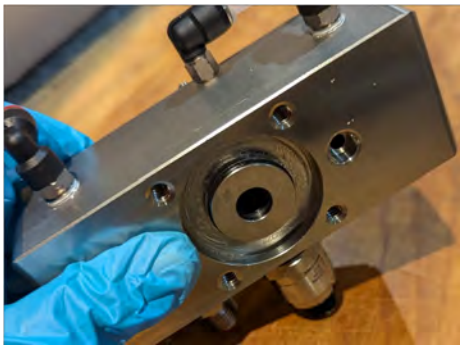
5.3.2. Grease the O-ring groove on the cylinder adapter.

5.3.3. Apply a new 2-027 Perfluoroelastomer O-ring (item 17) onto the cylinder adapter.

5.3.4. Repeat for the other cylinder adapter if necessary.

5.4. Replace any damaged O-rings on the top block (item 10) and bottom block (item 22).

5.4.1. Using a seal puller or hook, remove the damaged O-ring on the bottom of the top block (where the dispense pump cylinder rests).Grease the O-ring groove on the top block.



5.4.2. Grease the o-ring in the groove on the top block.

5.4.3. Apply a new 2-020 Perfluoroelastomer O-ring (item 15) to the top block.

5.4.4. Using a seal puller or hook, remove the damaged O-ring on the top of the bottom block.

5.4.5. Grease the O-ring groove on the bottom block.

5.4.6. Apply a new 2-020 Perfluoroelastomer O-ring (item 15) to the bottom block.

06.5 ASSEMBLY

1. Install seal holder assembly into the top block (item 10).

1.1. Insert one rod seal (item 6) into the top block. Ensure the side of the seal with the O-ring is facing up.

1.2. Apply lubricant to the O-ring on the seal holder assembly.

1.3. Insert the seal holder assembly into the top block.

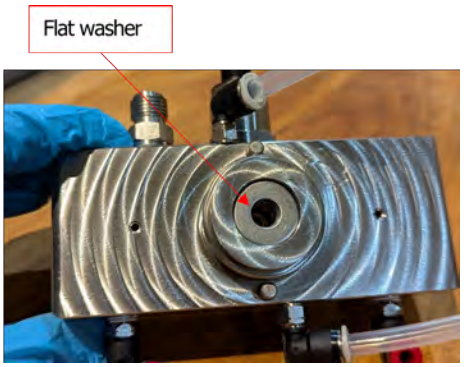
1.4. Using a 5/16” Allen wrench, press the seal holder assembly into the block until it clicks into place. The top of the seal holder assembly will be below the lip of the seal housing flange.

⚠ CAUTION

Use a flat edged tool to push the seal holder assembly into place. Avoid using sharp or pointed tools that could damage the part

1.5. Insert the top rod seal (item 6) into the seal holder assembly. Ensure the O-ring on the rod seal is facing down to complete the seal with the bottom rod seal.

2. Insert the flat washer (item 4) and snap ring (item 3) into the top block (item 10).
   2.1. Place the flat washer on top of the rod seal. Ensure the washer is fully seated in the assembly.



NOTICE

Flat washers typically wear and distort during use. Rebuild the dispense pump with a replacement and dispose of the previously used washer.

   2.2. Using the snap ring tool, pinch the ends of the snap ring together.

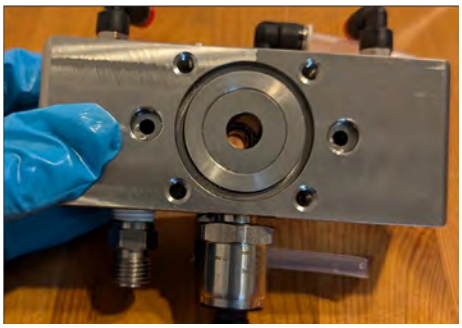
   2.3. Place the pinched snap ring on the washer.
   2.4. Release to snap the ring into place. Ensure the entire ring is secure and below the lip of the top block rod seal assembly port.

NOTICE

Ensure the snap ring is snapped into place.

3. 600 cc dispense pump only: Install one cylinder adapter (item 16)
   3.1. Apply lubricant to the O-ring around the cylinder adapter.
   3.2. Apply lubricant to one flat side of the cylinder adapter.
   3.3. Apply lubricant to the circular groove on the bottom block (item 22).
   3.4. Place the lubricated side of the cylinder adapter onto the bottom block and press it firmly into the groove.

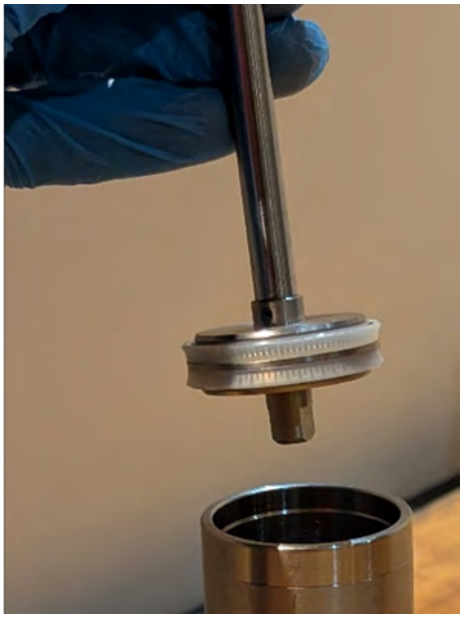
   3.5. Apply lubricant to the remaining flat side of the cylinder adapter and the circle within it.



   3.6. Repeat the procedure to install the cylinder adapter in the top block.

4. Apply lubricant to the four O-rings on the two fluid tubes (item 18).
5. Place the two fluid tubes (item 18) into the grooves on the bottom block (item 22).

6. Install the cylinder (item 20) and piston assembly (item 21) into the dispense pump.
   6.1. Insert the piston assembly into the cylinder with the side closest to the piston seal (item 19) facing down.



   6.2. Rest the cylinder in the circular groove on the bottom block (item 22).

   6.3. Push the cylinder into place.

NOTICE

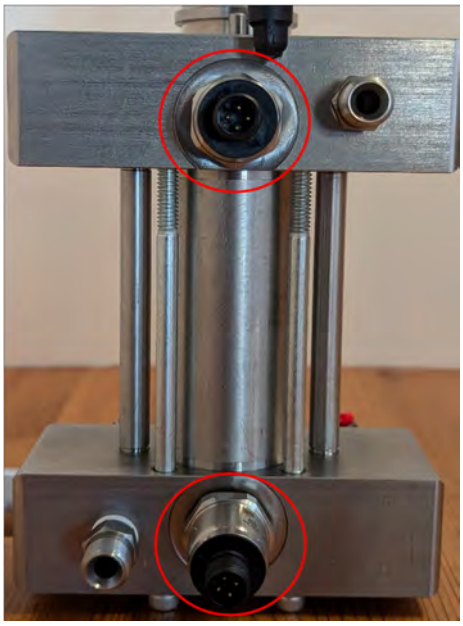
Ensure no pieces of the o-ring are cut or trapped between the cylinder and block

   6.4. Push the piston assembly down by hand until the first piston seal is inside the cylinder.
   6.5. Tap the piston assembly with a mallet to push the assembly further into the cylinder.

NOTICE

Ensure not to bend the piston seals outward or snag them onto the cylinder.

7. Install the top block (item 10).
   7.1. Ensure the top block and bottom block(item 22) align.



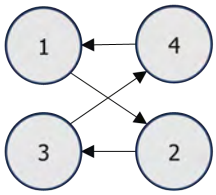
NOTICE

Verify the orientation of the top and bottom blocks is similar before pushing them together.

   7.2. Align the holes in the bottom of the top block with the fluid tubes (item 18) and cylinder (item 20).
   7.3. Push the top block down. If necessary, adjust the fluid tubes to fit in their respective holes on the top block.
   7.4. Press firmly until the cylinder and fluid tubes are in place.
   7.5. Check for damaged or trapped O-rings.

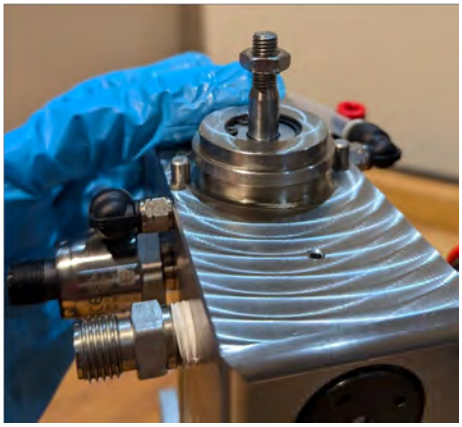
8. Secure the dispense pump assembly with the socket head cap screws (item 23).
   8.1. Lubricate the end threads of the four socket head cap screws (1/4-20 x 5.5” LG).

   8.2. Insert the screws through the holes in the bottom block (item 22) toward the top block (item 10).
   8.3. Tighten all four bolts with a 3/16” Allen wrench.



      8.3.1. Rotate the upper left bolt clockwise.
      8.3.2. Rotate the bottom right bolt clockwise.
      8.3.3. Rotate the bottom left bolt clockwise.
      8.3.4. Rotate the upper right bolt clockwise.
      8.3.5. Repeat until snug.

9. Thread the hex jam nut (1/4-28, part item 2) onto the drive assembly, but do not tighten it.



NOTICE

Do not tighten the jam nut until the pump rod adapter is on the drive assembly.

10. Attach the pump rod adapter (item 1) to the dispense pump assembly.
    10.1. Thread the pump rod adapter onto the tip of the drive assembly.
    10.2. Secure an 11 mm wrench to the jam nut and a 13 mm wrench to the pump rod adapter.
    10.3. Hold the pump rod adapter in place. Move the jam nut clockwise to lock the pieces together.

11. Pull the pump rod out to the length recorded during disassembly (section 06.2).

12. Install the four MCV assemblies (item 13) into the top block (item 10) and bottom block (item 22).
    12.1. Apply lubricant inside the port on the end of the block.
    12.2. Apply lubricant to the MCV seat assembly (item 12), including the threads and O-ring.
    12.3. Insert the MCV seat assembly into the port.

12.4. Using a 5/16” Allen wrench, tighten the MCV seat assembly.

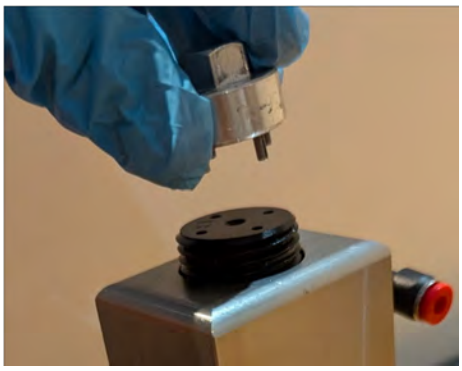
NOTICE

Tighten the MCV seat assembly into place carefully, without breaking the o-ring. If the o-ring breaks, remove the assembly and replace the o-ring

12.5. Apply lubricant to the threads and O-rings of the MCV assembly using a Q-tip.

12.6. Insert the MCV assembly into the port.

12.7. Place the MCV tool into the indentations in the MCV assembly.



12.8. Secure an adjustable wrench to the MCV tool.

12.8.1. If using an adjustable torque wrench, the recommended torque setting for the MCV tool is 15-20 in/lb.

12.8.2. Turn the wrench clockwise to tighten the MCV assembly into the port until snug.

12.8.3. The MCV assembly should be nearly flush with the side of the block.

12.9. Repeat the procedure to install the remaining three MCV seat assemblies and MCV assemblies.

13. Refill oil gauges.

13.1. Refill FEP tubing (item 8) with DeVilbiss SSL-10 gun oil.

13.1.1. Insert the tip of the bottle containing the oil into one tube end and press down to seal the bottle tip with the tubing.

13.1.2. Fill the dispense pump with oil until the oil comes almost to the top of the gauge on the opposite side of the top block.

13.1.3. Remove the bottle and allow the liquid levels in the tubes to even out. Add additional grease to the tubes until they are a little over half full.

13.2. Attach the end caps (item 9) to the FEP tubing.

06.6 DISPENSE PUMP INSTALLATION

1. Ensure the pump rod adapter (item 1) is the same distance from the housing flange as when removed.
2. Attach the pump rod adapter (item 1) to the coupler on the machine.

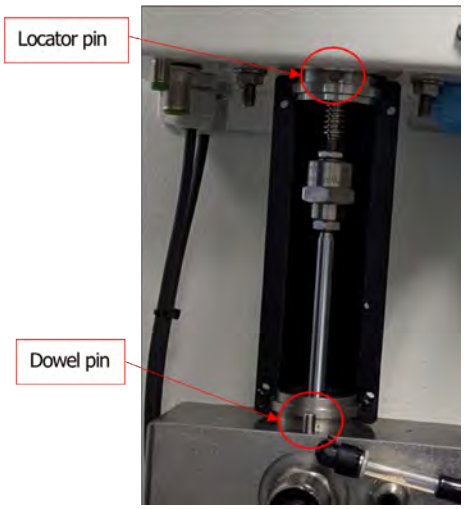
2.1. Thread the coupler onto the rod adapter by hand.

2.2. Place a 21 mm wrench on the coupler and a 13 mm wrench on the rod adapter.

2.3. Move the wrenches outward (away from each other) to tighten the coupler and rod adapter until snug.

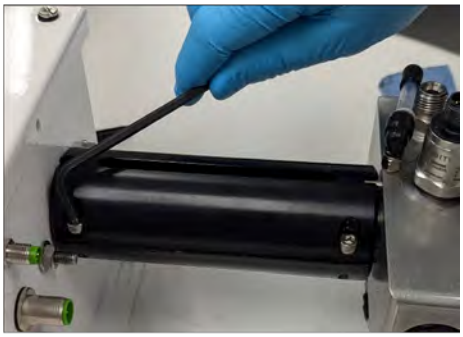
3. Attach coupling to pump rod.
   3.1. The front coupling component has holes for the screws to enter. The back coupling component has smaller holes for the screws to exit.

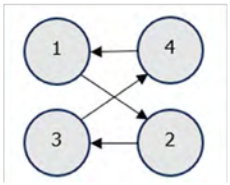
   3.2. Place the back coupling on the back of the pump rod.



   3.3. Ensure coupling aligns with the dowel pins (item 11) on the top block (item 10) and with the locator pins on the machine.
   3.4. Place the front coupling on the pump rod.
   3.5. Hold the halves of the coupling tightly and wiggle the dispense pump gently until they close. The connection should be tight.

4. Screw coupling halves together.
   4.1. Place screws in each of the four screw positions.
   4.2. Using a 4 mm Allen wrench, tighten the screws in a star pattern:





      4.2.1. Rotate the upper left screw clockwise.
      4.2.2. Rotate the bottom right screw clockwise.
      4.2.3. Rotate the bottom left screw clockwise.
      4.2.4. Rotate the upper right screw clockwise.
      4.2.5. Repeat until snug.
5. Reattach the pressure sensors.
6. Reattach the inlet and outlet hoses.

MANUAL CHANGE SUMMARY		
Date	Description	Version
05/01/2025	Initial Release	R1

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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.

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WARRANTY PAGE

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