### Auto-Flo RT Gun

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NORDSON CORPORATION • AMHERST, OHIO • USA

Safety	1
Qualified Personnel	1
Intended Use	1
Regulations and Approvals	1
Personal Safety	1
High-Pressure Fluids	1
Fire Safety	2
Halogenated Hydrocarbon Solvent Hazards	2
Action in the Event of a Malfunction	2
Disposal	2
Description	3
Installation	4
Install the Auto-Flo RT Gun	-
onto the SDS Meter	4
Install a Nozzle	4
Install a QUISS RTVision	
Sensor Head	4

Operation	4
Maintenance	4
Troubleshooting	6
Repair	6
Consumable Items	6
Remove the Gun	_
from the SDS Meter	7
Replace the Seal Cartridge	8
Replace the Temperature Sensor	8
Replace a Heater	8
Put the Auto-Flo RT	
Gun Back into Service	8
Parts	10
Auto-Flo RT Gun	10
Seal Kit	12

#### Contact Us

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# Safety

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

### **Qualified Personnel**

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

#### Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

### **Regulations and Approvals**

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

### Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.

- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- Make sure the spray area is adequately ventilated.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

#### **High-Pressure Fluids**

High-pressure fluids, unless they are safely contained, are extremely hazardous. Always relieve fluid pressure before adjusting or servicing high pressure equipment. A jet of high-pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

If you suffer a fluid injection injury, seek medical care immediately. If possible, provide a copy of the MSDS for the injected fluid to the health care provider.

The National Spray Equipment Manufacturers Association has created a wallet card that you should carry when you are operating high-pressure spray equipment. These cards are supplied with your equipment. The following is the text of this card:



**WARNING:** Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show him this card
- Tell him what kind of material you were spraying

MEDICAL ALERT—AIRLESS SPRAY WOUNDS: NOTE TO PHYSICIAN

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable.

The seriousness of the wound depends on where the injury is on the body, whether the substance hit something on its way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound. If the injected paint contains acrylic latex and titanium dioxide that damage the tissue's resistance to infection, bacterial growth will flourish. The treatment that doctors recommend for an injection injury to the hand includes immediate decompression of the closed vascular compartments of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement, and immediate antibiotic treatment.

### Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.

- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

# Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

<u>Element</u>	<u>Symbol</u>	<u>Prefix</u>
Fluorine	F	"Fluoro-"
Chlorine	CI	"Chloro-"
Bromine	Br	"Bromo-"
lodine	I	"lodo-"

Check your material MSDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your Nordson representative for information about compatible Nordson components.

#### Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.

#### Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

# Description

See Figure 1. The Auto-Flo RT gun is designed for use as a material outlet valve on an SDS Meter. It can be wired for 120- and 240-volt circuits.

The Auto-Flo RT gun can be configured with a QUISS RTVision sensor head to provide continuous monitoring of the material bead during the application process.

Refer to Table 1 for the specifications.



Figure 1 Auto-Flo RT Gun

Table 1 Specifications			
Item	Specification		
Normal Operating	150 °F		
Temperature	(65.5 °C)		
Maximum Seal	200 °F		
Operating Temperature	(93 °C)		
Maximum Fluid	3000 psi		
Operating Pressure	(206 bar)		
Maximum Air	120 psi		
Inlet Pressure	(8 bar)		
Actuating	60-120		
Air Pressure	(4-8 bar)		
Air Quality	Oil-free and filtered through 5-micron or finer particulate filter		
Air	0.04 scfm		
Usage	(0.0012 m <sup>3</sup> )		
Dimensions Mounted to an SDS Meter with QUISS RTVision Sensor Head Installed	See Figure 2.		
Note: Specifications are approximate.			



Figure 2 Typical Dimensions

### Installation

See Figure 3 and perform the applicable procedures.



**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

#### Install the Auto-Flo RT Gun onto the SDS Meter

- 1. Disconnect and lockout power to the SDS Meter (1).
- 2. Turn off the supply air to the SDS Meter. Relieve all fluid and air pressures.

**NOTE:** The O-ring (2) and screws (10) are shipped with the Auto-Flo RT gun in a separate package.

- 3. Lubricate the O-ring (2) with TFE grease. Install the O-ring onto the Auto-Flo RT gun (3).
- Apply Loctite 242 adhesive to the threads of the screws (10). Install the Auto-Flo RT gun (3) onto the SDS meter (1) using the screws. Tighten the screws to 50 in. lb (5.6 N•m).
- Connect the open air line (12) the open fitting (11). Connect the close air line (13) to the close fitting (14).
- 6. Connect the gun cable (15) to the bulk unloader controller.

#### Install a Nozzle

**NOTE:** The nozzle type is dependent upon the application. Contact a Nordson representative for assistance with nozzle selections if necessary.

Use the retaining nut (8) to secure a nozzle (9) to the Auto-Flo RT gun (3). Tighten the retaining nut securely.

#### Install a QUISS RTVision Sensor Head

Perform the following steps to install a QUISS RTVision sensor head to the Auto-Flo RT gun.

**NOTE:** Refer to the QUISS RTVision system documentation for detailed information about the sensor head (5) if necessary.

- 1. Remove the screws (7) and lock washers (6) from the Auto-Flo RT gun (3).
- Install the QUISS RTVision sensor head (5) onto the Auto-Flo RT gun (3) using the lock washers (6) and screws (7). Tighten the screws to 15 in. lb (1.6 N•m).
- 3. Connect the cables (4) from the QUISS RTVision system to the sensor head (5).

# Operation

Operation of the Auto-Flo RT gun is dependent upon the system and application requirements.

### Maintenance



**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

**NOTE:** It may be necessary to adjust frequencies due to the facility enviornment, process parameters, or material being applied.

The frequencies listed in Table 2 are only guidelines. Always perform preventive maintenance procedures according to your facility maintenance schedule.

Table 2 Typical Maintenance Schedule

Frequency	Task
Daily	Check the nozzle for wear and replace if necessary.
Periodically	Check the air lines for leaks or damage and replace if necessary.
	Make sure that the gun is mounted securely.
	See Figure 3. Check the weep hole (16) for signs of adhesive. Rebuild the Auto-Flo RT gun if adhesive weepage is excessive.



Figure 3 Installation

## Troubleshooting



**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

**NOTE:** Some problems may originate with other components in the system and not with the Auto-Flo RT gun. Refer to the appropriate system manuals for more information if the Corrective Actions listed here do not solve the problem.

	Problem	Possible Cause	Corrective Action
1.	Leaking around nozzle or nozzle nut	Dirty or damaged metal sealing surfaces	Clean nozzle, and clean or replace packing cartridge.
2.	Leaking through weep hole in valve body	Worn seal cartridge	Replace seal cartridge.
3.	Auto-Flo RT Gun responds slowly	Worn seal cartridge and/or air piston	Replace seal cartridge.
		Low air pressure	Increase air pressure.

### Repair



**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

#### **Consumable Items**

Table 3 lists the consumable items that are required to repair the Auto-Flo RT gun.

Table 3 Consumable Items			
Item	Part	Application	
Loctite 242 Adhesive	900464	Apply to threads of applicable screws.	
Heat Sink Compound	900298 (5 oz)	Apply to heaters and temperature	

sensor.

#### Table 3 Consumable Items

# Remove the Gun from the SDS Meter

- 1. See Figure 4. Disconnect and lockout power to the SDS Meter (1).
- 2. Turn off the supply air to the SDS Meter (1). Relieve all fluid and air pressures.
- 3. Disconnect the gun cable (13) from the bulk unloader controller.
- 4. Only perform this step if using the Auto-Flo RT gun with a QUISS RTVision sensor head (5):
  - a. Disconnect the QUISS RTVision system cables (4) from the sensor head (5).
  - Remove the screws (7) and lock washers (6) securing the QUISS RTVision sensor head (5) to the Auto-Flo RT gun (3).

- 5. Disconnect the air lines (10, 11) from the fittings (9, 12).
- Remove the screws (8) securing the Auto-Flo RT gun (3) to the SDS meter (1). Remove the O-ring (2) from the gun (3). Discard the O-ring.



Figure 4 Removing the Gun from an SDS Meter

#### Replace the Seal Cartridge

See Figure 5 and use the following procedure to replace the seal cartridge.

- 1. Remove the screws (5) securing the seal cartridge (1) to the adapter (4). Remove the seal cartridge from the adapter.
- 2. Remove the fittings (2) from the old seal cartridge (1) and install them onto the new seal cartridge. Tighten the fittings securely.
- Apply Loctite 242 adhesive to the threads of the screws (5). Install the seal cartridge (1) onto the adapter (4) using the screws. Tighten the screws to 50 in. lb (5.6 N•m).

**NOTE:** Instructions for rebuilding the seal cartridge are included with Seal Cartridge Kit 1074446.

#### Replace the Temperature Sensor

See Figure 5 and use the following procedure to replace the temperature sensor.

- 1. Remove the screws (5) securing the seal cartridge (1) to the adapter (4). Remove the seal cartridge from the adapter.
- 2. Remove the screws (8) securing the cover (7) to the electrical box (10).
- 3. Loosen the screws on the 2-station connector (6) and remove the temperature sensor wires (12).
- 4. Remove the temperature sensor (11) from the adapter (4).
- 5. Apply heat sink compound to the new temperature sensor (11) and insert it into the adapter (4).
- Route the temperature sensor wires through the slot on the adapter (4) and insert them into the 2-station connector (6). Tighten the 2-station connector screws.
- Apply Loctite 242 adhesive to the threads of the screws (8). Install the cover (7) onto the electrical box (10) using the screws. Tighten the screws securely.
- Apply Loctite 242 adhesive to the threads of the screws (5). Install the seal cartridge (1) onto the adapter (4) using the screws. Tighten the screws to 50 in. lb (5.6 N•m).

#### Replace a Heater

See Figure 5 and use the following procedure to replace a heater.

- Remove the screws (5) securing the seal cartridge (1) to the adapter (4). Remove the seal cartridge from the adapter.
- 2. Remove the screws (8) securing the cover (7) to the electrical box (10).
- 3. Remove the heater wires (14) from the applicable wire connector (9).
- 4. Remove the heater (3) from the adapter (4). If necessary, use a wire rod (13) as shown to push the heater out of the adapter.
- 5. Apply heat sink compound to the new heater (3) and install it into the adapter (4).

**NOTE:** The heaters can be wired for either 120- or 240-volt circuits. Refer to the wiring diagrams shown in Figure 5 if necessary.

- Route the heater wires (14) through the slot on the adapter (4). Connect the heater wires to the applicable wire connector (9).
- Apply Loctite 242 adhesive to the threads of the screws (8). Install the cover (7) onto the electrical box (10) using the screws. Tighten the screws securely.
- Apply Loctite 242 adhesive to the threads of the screws (5). Install the seal cartridge (1) onto the adapter (4) using the screws. Tighten the screws to 50 in. lb (5.6 N•m).

#### Put the Auto-Flo RT Gun Back into Service

See Figure 3 and refer to the *Install the Auto-Flo RT Gun onto the SDS Meter* procedure to put the Auto-Flo RT gun back into service.





### **Parts**

To order parts, call the Nordson Customer Service Center or your local Nordson representative.

#### Auto-Flo RT Gun

See Figure 6 and refer to the following parts list.



Figure 6 Parts

Item	Part	Description	Quantity	Note
—	1074307	Gun, Auto-Flo RT	1	
1	1074308	Cartridge, seal	1	A
2	982171	Screw, socket, M5 x 60	2	
3	900464	Loctite 242, 50 ml	1	
4	971521	<ul> <li>Elbow, male, <sup>1</sup>/<sub>4</sub> tube x <sup>1</sup>/<sub>8</sub> NPT</li> </ul>	2	
5	1062768	Heater, 120 Vac, 25 watt	2	
6	900298	Compound, heat sink, 5 oz	1	
7	939523	Sensor, temperature	1	
8	1074386	Adapter, heated	1	
9	982028	Screw, socket, M5 x 20	12	
10	1031834	TFE grease	AR	
11	152290	Nut, retaining	1	
12	1062170	Adapter, insulator	1	
13	983401	Washer, lock split, M5	2	
14		Name plate	1	
15		Screw	4	
16	1060683	Cord set, SDS 240 volt	1	
17	1072035	Box, electrical	1	
18	983524	Washer, lock, external #6	1	
19	981011	• Screw, 6-32 x 0.250	1	
20	939220	Connector wire set	2/3	В
21	939586	Connector, 2-station	1	
22	1062357	Cover	1	
23	982636	Screw, button, M5 x 12	2	
24	940133	<ul> <li>O-ring, Viton, 0.426 ID x 0.070 wide</li> </ul>	1	С
NS	242867	Tag, warning	1	
NS	247646	Card, medical alert injection	1	
NS	178475	Tag, hot surface	1	
NOTE A: Order Cartridge Seal Kit 1074446 to reduce downtime. This kit includes instructions for rebuilding the seal cartridge.				
B: Two wire connector sets are required for 120 Vac configurations. Three wire connector sets are required for 240 Vac configurations.				
C: This part is included with item 1 and can also be ordered separately.				

AR: As Required

NS: Not Shown

#### Seal Kit

See Figure 7. The following seal kit is available for the Auto-Flo RT gun. This kit includes instructions for replacing the cartridge seals.

2 3 5 6 TØ\$ 1 O Ð 4 0 6A 0 Ó 00 8

#### Figure 7 Seal Kit

ltem	Part	Description	Quantity	Note
—	1074446	Kit, seal	1	A
1		<ul> <li>O-ring, Viton, 1.428 x 0.070</li> </ul>	1	
2		<ul> <li>O-ring, Viton, 0.188 x 0.313 x 0.063</li> </ul>	1	
3		Seal, Polymyte	1	В
4		Retaining ring, 43, push-on	1	В
5		<ul> <li>O-ring, Viton, 0.864 ID x 0.070 W</li> </ul>	1	
6		• O-ring, Viton, 0.489 ID x 0.070 W,10414	1	
7		• O-ring, Viton, 0.562 x 0.688,10415	1	
8		• O-ring, Viton, 0.426 ID x 0.070 W,10413	1	
NS		<ul> <li>Grease fitting, <sup>1</sup>/<sub>4</sub>-28</li> </ul>	1	
NOTE A: This kit includes instructions for rebuilding the seal cartridge.				
B: Order retainer tool 1073157 to properly install this part.				
NS: Not Shown				