Hot Melt Adhesive Applicator
AltaSlot™–i

Manual P/N 7119466C
– English –

Issued 09/10
### Note
This document is for products with the following P/N:

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### Order number
P/N = Order number for Nordson products

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Safety Instructions

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

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.

**WARNING:** Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.

**WARNING:** Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.

**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

**CAUTION:** (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.
Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer’s product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility’s engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.
User Qualifications

Equipment owners are responsible for ensuring that users:

- Receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- Are familiar with the equipment owner’s safety and accident prevention policies and procedures
- Receive, equipment- and task-specific training from another qualified individual

**NOTE:** Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- Possess industry- and trade-specific skills and a level of experience appropriate to their job function
- Are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities
Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to Safety Labels and Tags (if available) at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.
Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used and that the processing characteristics of the material will not create a hazardous environment. Refer to the Material Safety Data Sheet (MSDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to Equipment Safety Information or the material manufacturer’s instructions and MSDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.
Maintenance and Repair Practices

- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new or factory-authorized refurbished replacement parts.
- Read and comply with the manufacturer’s instructions and the MSDS supplied with equipment cleaning compounds.
  
  **NOTE:** MSDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.

- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable MSDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.
Equipment Safety Information

Disabling the Guns

All electrical or mechanical devices that provide an activation signal to the guns, gun solenoid valve(s), or the melter pump must be disabled before work can be performed on or around a gun that is connected to a pressurized system.

1. Turn off or disconnect the gun triggering device (pattern controller, timer, PLC, etc.).

2. Disconnect the input signal wiring to the gun solenoid valve(s).

3. Reduce the air pressure to the gun solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the gun.
# General Safety Warnings and Cautions

Table 1-1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1-1 as follows:

- **HM** = Hot melt (melters, hoses, guns, etc.)
- **PC** = Process control

## Table 1 General Safety Warnings and Cautions

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Warning or Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HM</strong></td>
<td><strong>WARNING:</strong> Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material’s MSDS. Ensure that the material’s processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with MSDS requirements can cause personal injury, including death.</td>
</tr>
<tr>
<td><strong>HM</strong></td>
<td><strong>WARNING:</strong> Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and guns contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.</td>
</tr>
<tr>
<td><strong>HM</strong></td>
<td><strong>WARNING:</strong> System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.</td>
</tr>
<tr>
<td><strong>HM</strong></td>
<td><strong>WARNING:</strong> Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.</td>
</tr>
</tbody>
</table>

*Continued*...
## General Safety Warnings and Cautions (contd)

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Warning or Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM, PC</td>
<td><strong>WARNING:</strong> Equipment starts automatically! Remote triggering devices are used to control automatic hot melt guns. Before working on or near an operating gun, disable the gun’s triggering device and remove the air supply to the gun’s solenoid valve(s). Failure to disable the gun’s triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.</td>
</tr>
<tr>
<td>HM, PC</td>
<td><strong>WARNING:</strong> Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.</td>
</tr>
<tr>
<td>HM, PC</td>
<td><strong>WARNING:</strong> Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage to the equipment.</td>
</tr>
<tr>
<td>HM</td>
<td><strong>CAUTION:</strong> Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment’s ability to process PUR, contact your Nordson representative for assistance.</td>
</tr>
<tr>
<td>HM</td>
<td><strong>CAUTION:</strong> Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer’s instructions and the MSDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.</td>
</tr>
</tbody>
</table>
Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.

First Aid

If molten hot melt comes in contact with your skin:

1. Do NOT attempt to remove the molten hot melt from your skin.
2. Immediately soak the affected area in clean, cold water until the hot melt has cooled.
3. Do NOT attempt to remove the solidified hot melt from your skin.
4. In case of severe burns, treat for shock.
5. Seek expert medical attention immediately. Give the MSDS for the hot melt to the medical personnel providing treatment.
Description

Intended Use

Applicators in the series AS-i may be used only for intermittent surface application of hot melt adhesives.

Any other use is considered to be unintended. Nordson will not be liable for personal injury or property damage resulting from unintended use.

Intended use includes the observance of Nordson safety instructions. Nordson recommends obtaining detailed information on the materials to be used.

Unintended Use – Examples –

The applicator may not be used under the following conditions:

- When changes or modifications have been made by the customer
- In defective condition
- When values stated under Technical Data are not complied with.

The applicator may not be used to apply the following materials:

- Explosive and flammable materials
- Erosive and corrosive materials
- Food products.

Residual Risks

In the design of the unit, every measure was taken to protect personnel from potential danger. However, some residual risks can not be avoided. Personnel should be aware of the following:

- Risk of burns on the hot applicator: from hot material, when replacing filter and when making adjustments
- Material fumes can be hazardous. Avoid inhalation.
Type Designation

Example: AS-i-1-N-110-70

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>AS</td>
<td>Alta Slot</td>
</tr>
<tr>
<td>i</td>
<td>Intermittent</td>
</tr>
<tr>
<td>1</td>
<td>Number of control modules</td>
</tr>
<tr>
<td>N</td>
<td>Temperature sensor Ni120 (alternative P for temperature sensor Pt100)</td>
</tr>
<tr>
<td>110</td>
<td>Nozzle width 110 mm</td>
</tr>
<tr>
<td>70</td>
<td>Application width 70 mm</td>
</tr>
</tbody>
</table>

ID Plate

The ID plate displays the following information:

- Applicator type
- Nordson order number
- Serial number
- Operating voltage ($V = $Volt)
- Total power consumption ($W = $Watt)

Fig. 1
Illustration

Fig. 2  Example AS-i–1-N-110-70

1  Solenoid valve
2  Voltage plug Heater
3  Control module
4  Fastening bolts
5  Hose connection
6  Mouthpiece
7  Shim plate
8  Nozzle slit
9  Mouthpiece receptacle
10  Bore for holding down device
11  Filter cartridge
12  Body
13  Control air connection
Function

Material Flow

The material is fed from a melter through a heated hose, then into the applicator. From there it flows through the material channels to the control modules.

Control Module

Suction stem control modules precisely open and close the material supply to the application nozzle by pneumatically raising or lowering the nozzle stems. The material is suctioned back into the control module by the upward movement. This ensures that the material is cut off properly.

Shim Plates

A specific application pattern is achieved by inserting shim plates of certain sizes and designs between the mouthpiece and the mouthpiece receptacle. The material channels in the mouthpiece must correspond to the application pattern.

The applicator includes a shim plate that is ready to use and a shim plate blank. Refer to page 15, Removing Shim Plate Blank.

Heating

The applicator is heated with electrical heater cartridges. The temperature is continuously measured by temperature sensors and is controlled with electronic temperature controllers.

The temperature controllers are not part of the applicator.

Filter Cartridge

The material flows from the inside of the filter cartridge to the outside. Thus dirt particles remain in the filter cartridge.

Bores for Holding Down Device

Refer to page 16, Attaching Holding Down Devices.
Installation

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

Unpacking

Unpack carefully. Then check for any damage caused during shipping.

Transport and Storage

NOTE: The applicator is a high precision, valuable part. Handle very carefully!

CAUTION: Do not store outside! Protect from humidity and dust. Protect the nozzle from damage. Do not lay unit on the nozzle.

Removing Shim Plate Blank

The applicator includes a shim plate blank. It is in the nozzle during transport and must be removed before initial startup of the applicator.

1. Disassemble the nozzle. Refer to page 28, Application Nozzle Maintenance.

NOTE: Before initial startup, the applicator need not be heated to disassemble the nozzle.

2. Remove the blank and save it for later use.

Mounting

- Protect from humidity, vibrations, dust and drafts
- Ensure access to parts relevant for maintenance and operation
- Install/attach the applicator in/to the parent machine. The essential distance and angle must remain variable to ensure optimal material application. Refer to page 22, Positioning Applicator.
- When installing the unit, ensure that cables, air hoses, and heated hoses can not be bent, pinched, torn off or otherwise damaged.
**Exhausting Material Vapors**

Ensure that material vapors do not exceed the prescribed limits. Exhaust material fumes when necessary. Provide sufficient ventilation of the location where the unit is installed.

**Attaching Holding Down Devices**

If the substrate is wider than the nozzle, the edges may curve up around the nozzle and cause damage. If this is the case, the customer should install devices to hold down the substrate. There are two M6 bores on the sides of the body for this purpose.

An example of suitable devices to hold down the substrate would be two plates at the same level as the nozzle, extending the width of the nozzle beyond the edge of the substrate.

![Diagram of holding down devices](image)

Fig. 3
Electrical Connection

**WARNING:** Risk of electrical shock. Failure to observe may result in personal injury, death, or equipment damage.

Laying Cable

**WARNING:** Ensure that cables do not touch rotating and/or hot unit components. Do not pinch cables and check regularly for damage. Replace damaged cables immediately!

Connecting Applicator

**WARNING:** Observe operating voltage! Refer to ID plate.

Heating

1. Connect the power cable to the heated hose receptacle.
2. Use safety clips (when available) to secure the plug connection.

Solenoid Valves

The solenoid valves on the control modules are controlled either by an external power supply, e.g. control unit, or through the valve control line of the heated hose.

**CAUTION:** Trigger the solenoid valves only when the applicator is heated to operating temperature! If the material is too cold, control module seals may be damaged.
Pneumatic Connection

Connecting Control Air

The applicator may only be connected to pressure controlled and conditioned compressed air.

The following requirements apply to the quality of the compressed air:

- Max. particle size 1 μm
- Max. particle density 1 mg/m³
- Max. pressure dewpoint −40 °C
- Max. oil concentration 0.1 mg/m³.

**NOTE:** Ensure that the applicator is supplied with control air at all times. The control air keeps the control modules closed when EMERGENCY OFF occurs or when the system comes to a standstill. This prevents material from dripping out of the nozzle.

1. Connect a controllable air supply to the control air fitting (1, Fig. 4).
2. Set control air pressure to approx. 4 to 6 bar (0.4 to 0.6 MPa / 58 to 87 psi). The exact pressure must be determined for each application.

Operating with Lubricated Control Air

The control modules can also be operated with lubricated compressed air.

**NOTE:** Once the air has been lubricated, it must always be lubricated; the lubricated compressed air will wash out the original lubricant on the solenoid valves and the control modules. Nordson recommends:

<table>
<thead>
<tr>
<th>Oil</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klüber Unisilkon TK002/50</td>
<td>316578</td>
</tr>
</tbody>
</table>

Fig. 4
Connecting Heated Hose

**WARNING:** Hot! Risk of burns. Wear heat-protective gloves.

### Connecting

If cold material can be found in the hose connection (1, 2), these components must be heated until the material softens (approx. 80 °C, 176 °F).

1. First connect the hose (3) electrically to the unit. For more than one hose: Every hose connection is allocated to a corresponding receptacle. Do not mistakenly exchange!
2. Heat the system and hose to approx. 80 °C (176 °F).
3. Screw on heated hose.

**NOTE:** Close unused hose connections with Nordson port plugs.

### Disconnecting

**WARNING:** System and material pressurized. Relieve system pressure before disconnecting heated hoses. Failure to observe can result in serious burns.

**WARNING:** Hot! Risk of burns. Wear safety goggles and heat-protective gloves.

1. Set motor speed(s) to 0 min⁻¹ (rpm); switch off motor(s).
2. Place a container under the application nozzle of the applicator.
3. Activate the solenoid valves electrically or manually. Repeat this procedure until no more material flows out.
Operation

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

Polyurethane Application Materials (PUR)

It is imperative that the following guidelines are followed when processing polyurethane application materials (PUR):

- Wear respiratory protection when the maximum permissible concentration of hazardous substances is exceeded.
- Before prolonged standstill of the application system, purge with a suitable cleaning agent. Use only a cleaning agent recommended by the material manufacturer.
- Close open material connections airtight.

Triggering Solenoid Valves

CAUTION: Trigger the solenoid valve only when the applicator is heated to operating temperature! If the material is too cold, control module seals may be damaged.
Setting Temperatures

Refer to temperature controller manual.

**Maximum Operating Temperature**

200 °C / 392 °F.

**NOTE:** The maximum operating temperature may not be exceeded.

The basis for temperature selections are the values stipulated by the material manufacturer (usually 150 to 180 °C / 302 to 356 °F).

Nordson will assume no warranty or liability for damage resulting from incorrect temperature settings.

Setting Control Air Pressure

The control air pressure for the control modules is set for each application on an external air pressure control valve. The air pressure control valve is not part of the applicator.

**NOTE:** Ensure that the applicator is supplied with control air at all times. The control air keeps the control modules closed when EMERGENCY OFF occurs or when the system comes to a standstill. This prevents material from dripping out of the nozzle.

**Maximum Control Air Pressure**

6 bar / 0.6 MPa / 87 psi

**NOTE:** The maximum control air pressure may not be exceeded.

Nordson will assume no warranty or liability for damage resulting from incorrect pressure settings.
Positioning the Applicator

The optimum angle of incidence of the applicator is a factor of various customer-specific parameters and cannot be determined precisely beforehand. The application pattern also depends on the speed at which the substrate moves, the quantity of material fed and the adhesive temperature.

Good application and material cutoff is achieved when the applicator is positioned almost completely vertical to the substrate. The angle can be adjusted within a range of approx. 80° to 100°.

If the angle of incidence of the applicator to the substrate is too great, a bead of material forms as soon as the adhesive is cut off. This soon leads to irregular material application and a scaly application pattern.

**NOTE:** The optimum position of the applicator depends on several factors of the customer’s specific application. Thus trial and error is the only way to determine the best position. The fundamental differentiations are:

- Application of material to open-pore substrate (nonwoven)
- Application of material to closed-pore substrate.

**Application of Material to Open-pore Substrate**

The applicator nozzle should be positioned between two rolls, as shown in Fig. 5. The coating is applied to the tensed substrate.

The substrate should not be diverted from a straight path by more than approx. 1 mm when the applicator touches it.
Application of Material to Closed-pore Substrate

The applicator nozzle should be positioned close to the coating roll, as shown in Fig. 6. However, coating is not performed against the roll but against the tensed substrate.

The substrate should not be diverted from a straight path by more than approx. 1 mm when the applicator touches it.

Fig. 6
Material Application

Nordson recommends following the sample calculation before starting up the applicator and making a note of the application-specific values for application weight and width, substrate speed and pump output capacity. These values can be used to calculate the pump speed and material quantity. The results of the calculations are also entered in the table. This ensures that all values can be reproduced at any time.

NOTE: The material quantity for intermittent application is calculated the same as for continuous material application.

Sample Calculation

Application weight (grammage) \( m = 20 \, \text{g/m}^2 \)
Application width of each material track \( b = 10 \, \text{mm} = 0.01 \, \text{m} \)
Substrate speed \( v = 500 \, \text{m/min} \)
Material quantity \( M = \frac{m \times b \times v}{20 \, \text{g/m}^2 \times 0.01 \, \text{m} \times 500 \, \text{m/min}} = 100.0 \, \text{g/min} \)
Output capacity of pump \( D = 2.4 \, \text{g/revolution} \)
Pump speed \( n = \frac{M}{D} \)

Values Specific to the Application

<table>
<thead>
<tr>
<th>Application weight (grammage) ( m )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application width ( b )</td>
</tr>
<tr>
<td>Substrate speed ( v )</td>
</tr>
<tr>
<td>Material quantity ( M = m \times b \times v )</td>
</tr>
<tr>
<td>Output capacity of pump ( D )</td>
</tr>
<tr>
<td>Pump speed ( n = M \div D )</td>
</tr>
</tbody>
</table>
Maintenance

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

**NOTE:** Maintenance is an important preventive measure for maintaining operating safety and extending the operational lifetime of the unit. It should not be neglected under any circumstances.

Relieving Pressure

**WARNING:** System and material pressurized. Before disconnecting heated hoses and replacing filter cartridges, relieve the system of pressure. Failure to observe can result in serious burns.

**WARNING:** Hot! Risk of burns. Wear safety goggles and heat-protective gloves.

1. Turn off material supply.
2. Place a container under the nozzle of the applicator.
3. Activate the solenoid valve electrically or manually. Repeat this procedure until no more material flows out.
Daily Maintenance

Visual Inspection for External Damage

WARNING: When damaged parts pose a risk to the operational safety of the applicator and/or safety of personnel, switch off the applicator and have the damaged parts replaced by qualified personnel. Use only original Nordson spare parts.

External Cleaning of Applicator

External cleaning prevents impurities created during production from causing the unit to malfunction.


CAUTION: Do not damage or remove warning labels. Damaged or removed warning labels must be replaced by new ones.

CAUTION: Do not use hard or metallic tools to clean. Do not use wire brushes! This could damage the release coating. Use only soft aids (wooden or PTFE spatula or soft brush).

Remove material residue only with a cleaning agent recommended by the material supplier. Heat with an air heater if necessary. Remove dust, flakes etc. with a vacuum cleaner or a soft cloth.
Regular Maintenance

The maintenance intervals are general guidelines based on experience. Depending on operating environment, production conditions and hours of operation, other maintenance intervals may prove necessary.

<table>
<thead>
<tr>
<th>Unit part</th>
<th>Activity</th>
<th>Interval</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicator</td>
<td>Purge with cleaning agent</td>
<td>When material is changed or when dirty</td>
<td>–</td>
</tr>
<tr>
<td>Control module</td>
<td>Check detection hole</td>
<td>Weekly</td>
<td>Page 27</td>
</tr>
<tr>
<td>Application nozzle</td>
<td>Cleaning</td>
<td>Regularly, or when the application pattern deteriorates</td>
<td>Page 28</td>
</tr>
<tr>
<td></td>
<td>Replace</td>
<td>When damaged</td>
<td>Page 27</td>
</tr>
<tr>
<td></td>
<td>Replace shim plate</td>
<td>When damaged</td>
<td></td>
</tr>
<tr>
<td>Filter cartridge</td>
<td>Clean</td>
<td>Weekly</td>
<td>Page 28</td>
</tr>
</tbody>
</table>

Changing Type of Material

**NOTE:** Before changing the type of material, determine whether the old and new material may be mixed.

- May be mixed: Remaining old material can be flushed out using the new material.
- May not be mixed: Thoroughly purge the unit with a cleaning agent recommended by the material supplier.

**NOTE:** Properly dispose of the material and cleaning agent according to local regulations.

Inspecting Control Module Detection Hole

If material escapes from the detection hole, the internal O-rings have worn and the control module must be replaced.

Replacing Control Module

1. Relieve pressure.
2. Release air connection and electrical connection.
3. Release screws (M4) and extract control module from warm applicator.
4. Insert new control module; tighten screws crosswise.
5. Re-connect air and electrical connection.
**Application Nozzle Maintenance**

The application nozzle must be regularly disassembled (mouthpiece, shim plate and mouthpiece receptacle) and cleaned. Material residue affects the quality of the application pattern. It must be removed.

**WARNING:** Hot! Risk of burns. Wear safety goggles and heat-protective gloves.

**CAUTION:** The application nozzle is a precision part. The following tasks should be performed only by specially trained personnel.

**NOTE:** Always follow manufacturer’s instructions when using cleaning agents! Carefully read the Material Safety Data Sheet for the cleaning agent used.

**NOTE:** Nordson will assume no warranty or liability for damage resulting from incorrect cleaning.

**Disassembling and Cleaning Application Nozzle**

1. Heat applicator until material is soft.
2. Release fixing screws (8) and detach application nozzle from body.
3. Release screws (2) and, with the aid of the screws and the forcing thread (3), pry the mouthpiece (4) off of the mouthpiece receptacle (7).

**NOTE:** Alignment pins (6) determine the position of the mouthpiece in relation to the mouthpiece receptacle.

4. Knock alignment pins out of the hole with a punch and hammer.
5. Use suitable tools (wooden or plastic) to remove charred material from the holes and channels.
6. Use a cleaning agent to dissolve material residue that could not be removed mechanically.

**NOTE:** Properly dispose of cleaning agent and material residue according to local regulations.
Assembling Application Nozzle

1. Use pins to join mouthpiece receptacle (7), shim plate (5) and mouthpiece (4), then screw together. Do this by hammering in the alignment pins (6) until the tops of the pins are even with the top of the mouthpiece.

2. Put Quadrings (1) back into place if necessary.

3. Screw application nozzle back onto body with the fixing screws (8).

Inserting New Shim Plate

1. Disassemble application nozzle as described above.

2. Fit new shim plate between mouthpiece and mouthpiece receptacle. The shim plate is held in place by two cylinder pins.

3. Screw nozzle halves together.

**NOTE:** The shim plate protrudes 0.2 to 0.4 mm out of the nozzle.

4. The shim plate must be ground until it is even with the mouthpiece and the mouthpiece receptacle.

5. Screw the application nozzle onto the applicator again.

Refacing Nozzle

The nozzle touches the substrate, causing it to naturally wear.

The nozzle may need to be refaced to compensate for wear.

**NOTE:** Nordson will assume no warranty or liability for damage resulting from incorrect refacing. The nozzle should be sent to Nordson for refacing.
Removing Filter Cartridge

**NOTE:** Remove and insert the filter cartridge only when the applicator is hot.

**WARNING:** Hot! Risk of burns. Wear safety goggles and heat-protective gloves.

**WARNING:** System and material pressurized. Relieve system of pressure before replacing a filter cartridge. Failure to observe can result in serious burns.

1. Place a container under the filter bore.
2. Insert screw into center tapped hole (Fig. 7).
3. Unscrew the filter cartridge counterclockwise with an open-end wrench or ring wrench.
   
   **CAUTION:** As soon as the thread is visible, cease turning. Otherwise part of the filter cartridge may remain in the bore.

4. Use suitable pliers to carefully extract filter cartridge (Fig. 8).
5. Purge the filter bore by allowing the pump to run briefly with material. This rinses out particles of dirt that may still be in the filter bore.
6. Properly dispose of material according to local regulations.

---

Installing Filter Cartridge

1. Heat the filter cartridge with an air heater until material is liquid.
2. Apply high temperature grease to all threads and O-rings. For high temperature grease, refer to
3. Slide the filter cartridge into the filter bore.
4. Screw filter cartridge in clockwise with an open-end or ring wrench (do not overtighten).
5. Feed material by allowing the pump to run until the material comes out of the applicator free of bubbles.
6. Properly dispose of material according to local regulations.
Disassembling and Cleaning Filter Cartridge

Disassemble the filter cartridge only when hot. If the filter cartridge is not disassembled immediately after removal, it must be heated (e.g. with an air heater).

**WARNING:** Hot! Risk of burns. Wear heat-protective gloves.

**NOTE:** Only use a cleaning agent recommended by the material supplier. Observe the Material Safety Data Sheet for the cleaning agent.

**NOTE:** Always replace the filter screen (4).

1. Disassemble the filter cartridge when hot.
2. Replace the filter screens.
3. Clean all other parts.
4. Check all O-rings; replace if necessary.
5. Apply high temperature grease to all threads and O-rings. Refer to page 34, *Processing Materials* for high temperature grease.
6. Properly dispose of cleaning agent according to local regulations.

---

Fig. 10

1 Center tapped hole
2 Filter screw
3 O-ring
4 Filter screen
5 Screw plug
## Troubleshooting

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

The following table is based on the assumption that all other system components function correctly.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No material</td>
<td>Applicator has not yet reached operating temperature</td>
<td>Wait until temperature has been reached; check temperature setting if necessary</td>
</tr>
<tr>
<td></td>
<td>Applicator cold or not warm enough</td>
<td>Refer to Applicator does not heat</td>
</tr>
<tr>
<td></td>
<td>Control air not connected</td>
<td>Connect</td>
</tr>
<tr>
<td></td>
<td>Nozzle clogged</td>
<td>Clean nozzle</td>
</tr>
<tr>
<td></td>
<td>Nozzle stem is stuck</td>
<td>Replace control module(s)</td>
</tr>
<tr>
<td></td>
<td>Filter cartridge clogged</td>
<td>Clean</td>
</tr>
<tr>
<td></td>
<td>Solenoid valves do not switch</td>
<td>Refer to Solenoid valves do not switch</td>
</tr>
<tr>
<td>Applicator does not heat</td>
<td>Temperature not set</td>
<td>Set on temperature controller</td>
</tr>
<tr>
<td></td>
<td>Voltage plug not connected</td>
<td>Connect</td>
</tr>
<tr>
<td></td>
<td>Heater cartridge(s) in applicator defective</td>
<td>Replace heater cartridge(s)</td>
</tr>
<tr>
<td>Applicator does not reach the set temperature</td>
<td>Heater cartridge(s) defective</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature too low</td>
<td>Increase ambient temperature</td>
</tr>
<tr>
<td>Solenoid valves do not switch</td>
<td>Control unit not switched on</td>
<td>Switch on</td>
</tr>
<tr>
<td></td>
<td>Valve connecting cable not plugged in properly</td>
<td>Check that plug connections are tight</td>
</tr>
<tr>
<td>Application pattern not exact</td>
<td>Temperature of applicator not set precisely</td>
<td>Correct setting</td>
</tr>
<tr>
<td></td>
<td>Material quantity/pressure not set precisely</td>
<td>Correct distance</td>
</tr>
<tr>
<td></td>
<td>Distance between application nozzle and substrate incorrect</td>
<td>Correct programming</td>
</tr>
<tr>
<td></td>
<td>Control unit for solenoid valves not programmed correctly</td>
<td>Refer to Maintenance</td>
</tr>
<tr>
<td></td>
<td>Nozzle polluted on outside</td>
<td>Replace nozzle</td>
</tr>
<tr>
<td></td>
<td>Nozzle polluted on inside</td>
<td>Check settings; change so as to be attuned to one another if necessary</td>
</tr>
<tr>
<td></td>
<td>Nozzle damaged</td>
<td>Ask manufacturer</td>
</tr>
<tr>
<td></td>
<td>Application quantity and web speed not attuned to one another</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material unsuitable</td>
<td></td>
</tr>
</tbody>
</table>

*Continued...*
<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| The *open time* is too long | Application temperature too high  
                        | Material unsuitable         | Set temperature lower     
                        |                                          | Ask manufacturer               |
| The *open time* is too short | Application temperature too low  
                     | Material unsuitable         | Set temperature higher    
                     |                                          | Ask manufacturer               |

* The *open time* is the time from when the material leaves the nozzle until it hardens on the substrate.
Technical Data

Operating Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating temperature</td>
<td>200 °C / 392 °F</td>
</tr>
<tr>
<td>Max. ambient temperature</td>
<td>40 °C / 104 °F</td>
</tr>
<tr>
<td>Maximum operating air pressure</td>
<td>6 bar / 0.6 MPa/ 87 psi</td>
</tr>
<tr>
<td>Maximum operating pressure (material)</td>
<td>70 bar / 7 MPa / 1015 psi</td>
</tr>
<tr>
<td>Note: Ensure that the material inlet is relieved of pressure when the control air is switched off. Otherwise the control modules can open, and material will flow out.</td>
<td></td>
</tr>
<tr>
<td>Maximum material viscosity that can be processed</td>
<td>10000 mPas / 10 Ns/m² / 10000 cP</td>
</tr>
<tr>
<td>Heatup time</td>
<td>≤ 30 min</td>
</tr>
</tbody>
</table>

Electrical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage (heater)</td>
<td>Refer to ID plate</td>
</tr>
<tr>
<td>Power consumption (heater)</td>
<td>Refer to ID plate</td>
</tr>
<tr>
<td>Operating voltage (solenoid valves)</td>
<td>24VDC</td>
</tr>
<tr>
<td>Power consumption (solenoid valves)</td>
<td>8.5 W (per solenoid valve)</td>
</tr>
</tbody>
</table>

General Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise emission</td>
<td>&lt; 75 dB(A)</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP 30</td>
</tr>
</tbody>
</table>

Processing Materials

<table>
<thead>
<tr>
<th>Designation</th>
<th>Order number</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>High temperature grease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Can</td>
<td>10 g</td>
<td>P/N 394769</td>
</tr>
<tr>
<td>• Tube</td>
<td>250 g</td>
<td>P/N 783959</td>
</tr>
<tr>
<td>• Cartridge</td>
<td>400 g</td>
<td>P/N 402238</td>
</tr>
<tr>
<td>NOTE: The grease should not be mixed with other lubricants. Olly/greasy parts must be cleaned before application.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parts

How to Use the Illustrated Parts List

The parts in this section are divided into the following columns:

**Item** — Identifies the parts shown, available from Nordson.

**Part** — Nordson spare part number for each available part shown in the illustration. A series of hyphens (- - - - -) in the Parts column means that the part can not be ordered separately.

**Description** — This column contains the name of the part and, when appropriate, the dimensions and other properties. The dots in the Description column illustrate the relationship between assemblies, subassemblies and individual parts.

**Quantity** — The quantity required per application head, assembly or subassembly. The abbreviation AR (as required) is used to designate that items are stated in drum sizes or that the quantity required per assembly is a factor of the product version or the model.
Assembly Overview
## Assembly Overview (contd.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>206455</td>
<td>Control module, complete</td>
<td>1</td>
<td>AS−i-1-x-xxx-xxx</td>
</tr>
<tr>
<td></td>
<td>402537</td>
<td></td>
<td></td>
<td>AR: AS−i-2-x-xxx-xxx, AS−i-3-x-xxx-xxx, AS−i-4-x-xxx-xxx, AS−i-5-x-xxx-xxx</td>
</tr>
<tr>
<td>2</td>
<td>406589</td>
<td>Nozzle filter MW0,08 w/thd.insert compl.</td>
<td>1</td>
<td>AS−i-1-x-xxx-xxx</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AR: AS−i-2-x-xxx-xxx</td>
</tr>
<tr>
<td></td>
<td>316681</td>
<td>Filter cartridge MW0,08 f.EP51−filter</td>
<td>1</td>
<td>AS−i-3-x-xxx-xxx, AS−i-4-x-xxx-xxx, AS−i-5-x-xxx-xxx</td>
</tr>
<tr>
<td>3</td>
<td>ID</td>
<td>Coating nozzle, complete</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>AR</td>
<td>Body, complete</td>
<td>1</td>
<td>–</td>
</tr>
</tbody>
</table>

AR: As Required  
ID: ID on part
### Body

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>ID</td>
<td>Body</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>1</td>
<td>7103264</td>
<td>Heater cartridge 3/8”x2” 230V–100W</td>
<td>AR</td>
<td>AS–i–1–x–xxx–xxx</td>
</tr>
<tr>
<td></td>
<td>250666</td>
<td>Heater cartridge 3/8”x1,5” 230V–125W</td>
<td>AR</td>
<td>AS–i–2–x–xxx–xxx</td>
</tr>
<tr>
<td>2</td>
<td>120167</td>
<td>Temperature sensor Ni120</td>
<td>AR</td>
<td>AS–i–x–N–xxx–xxx</td>
</tr>
<tr>
<td></td>
<td>253126</td>
<td>Temperature sensor Pt100</td>
<td>AR</td>
<td>AS–i–x–P–xxx–xxx</td>
</tr>
</tbody>
</table>
## Control Module

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>206455</td>
<td>Control module EP10, complete</td>
<td>1</td>
<td>AS−i-1-x-xxx-xxx</td>
</tr>
<tr>
<td>1</td>
<td>7106945</td>
<td>Control module EP10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>403376</td>
<td>Solenoid valve 3/2ways 24V/8,5W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>402537</td>
<td>Control module EP10, complete</td>
<td>AR</td>
<td>AS−i-2-x-xxx-xxx</td>
</tr>
<tr>
<td>1</td>
<td>7106945</td>
<td>Control module EP10</td>
<td></td>
<td>AS−i-3-x-xxx-xxx</td>
</tr>
<tr>
<td>2</td>
<td>403376</td>
<td>Solenoid valve 3/2ways 24V/8,5W</td>
<td></td>
<td>AS−i-4-x-xxx-xxx</td>
</tr>
</tbody>
</table>
Coating Nozzle
### Coating Nozzle (contd.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>ID</td>
<td>Coating nozzle</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>401853</td>
<td>QUAD-RING ®, 8.2x1.78</td>
<td></td>
<td>AR</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>Mouthpiece adapter</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ID</td>
<td>Shim plate</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8029570 7121940 7121969 7121975 7121979</td>
<td>Shim plate w/o slot</td>
<td>1</td>
<td>AS-i-1-x-xxx-xxx AS-i-2-x-xxx-xxx AS-i-3-x-xxx-xxx AS-i-4-x-xxx-xxx AS-i-5-x-xxx-xxx</td>
</tr>
<tr>
<td>5</td>
<td>265195</td>
<td>Parallel pin, D4m6x20, DIN6325-D</td>
<td></td>
<td>AR</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>Mouthpiece</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>250012</td>
<td>Allan head cap screw, M4x16</td>
<td></td>
<td>AR</td>
</tr>
<tr>
<td>8</td>
<td>280960</td>
<td>Parallel pin, D5m6x20, DIN6325-D</td>
<td></td>
<td>AR</td>
</tr>
<tr>
<td>9</td>
<td>254676</td>
<td>Allan head cap screw, M4x20</td>
<td></td>
<td>AR</td>
</tr>
</tbody>
</table>

AR: As Required  
ID: ID on part
**Filter P/N 283343**

![Filter P/N 283343 Diagram](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>283343</td>
<td>Filter screw KF25</td>
<td>1</td>
<td>AS-i-1-x-xxx-xxx</td>
</tr>
<tr>
<td>2</td>
<td>250257</td>
<td>O-ring 16x2 Viton</td>
<td>2</td>
<td>AS-i-2-x-xxx-xxx</td>
</tr>
<tr>
<td>3</td>
<td>279243</td>
<td>Filter sleeve MW0,08</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>258956</td>
<td>Screw plug KF25</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>250253</td>
<td>O-ring 12x2 Viton</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
## Filter P/N 316681

<table>
<thead>
<tr>
<th>Item</th>
<th>Part</th>
<th>Description</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>316681</td>
<td>Filter cartridge MW0.08</td>
<td>1</td>
<td>AS-i-3-x-xxx-xxx</td>
</tr>
<tr>
<td>1</td>
<td>318647</td>
<td>Filter Screw</td>
<td>1</td>
<td>AS-i-4-x-xxx-xxx</td>
</tr>
<tr>
<td>2</td>
<td>250262</td>
<td>O–ring 20x3 Viton</td>
<td>1</td>
<td>AS-i-5-x-xxx-xxx</td>
</tr>
<tr>
<td>3</td>
<td>269229</td>
<td>Filter sleeve MW0.08</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>407922</td>
<td>Nut M24x1 L30</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>250259</td>
<td>O–ring 18x2 Viton</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
CE
Declaration of the Incorporation of Partly Completed Machinery

The manufacturer: Nordson Engineering GmbH
Lilienthalstraße 6
21337 Lüneburg
Deutschland

herewith declares that the following product

Brand: Hot Melt Adhesive Applicator
Type: AltaSlot
Serial number: LU

conforms to the requirements of the following stated directives:
- 2006/95/EG, 2004/108/EG, 2006/42/EG

The incomplete machine may only then be commissioned if it was determined, that the machine, in which the incomplete machine will be installed, complies with the provisions of the Machinery Directive (2006/42/EG).

Complies with international provisions:

<table>
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<th>Standard</th>
<th>Part</th>
<th>Issued</th>
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<td>EN 12100</td>
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The machine’s technical documents as per Appendix VII Part A were created

Authorized agent for technical documents: Dieter Ziesmer
Leiter Qualitätssicherung
Nordson Engineering GmbH
Lilienthalstraße 6
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Authorized spokesman:
Axel Wenz
Managing Director
Lüneburg 25.10.2010