Hot Melt Application Heads
EB ... V
EB ... V-M

Manual P/N 4580091
- English -
Note
This manual applies to the entire series.

Order number
P/N = Order number for Nordson products

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Safety

WARNING: Please follow the safety regulations enclosed as a separate document and the specific safety notes in the entire documentation.

Description

1. Intended Use

Hot melt application heads EB ... V and EB ... V-M - hereafter also referred to as application head - may be used only to apply thermoplastic hot melt adhesives and polyurethane hot melt adhesives (PUR).

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 also includes the observance of Nordson safety instructions. Nordson recommends obtaining detailed information about the materials to be used.

Unintended Use - Examples -

The application head and the edge band guide may not be used under the following conditions:

- In defective condition
- When modifications or changes have been made by the customer
- In a potentially explosive atmosphere
- When hot melt adhesives not suitable for the unit are used
- When the values stated under Technical Data are not complied with.

The application head and the edge band guide may not be used to process the following materials:

- Explosive and flammable materials
- Erosive and corrosive materials
- Food products.
2. Residual Risks

The application head is designed to protect operating personnel from possible risks. However, some residual risks cannot be avoided. Personnel must consider the following:

- Risk of burns on the hot application head: from hot adhesive, when making adjustments.
- Inhalation of potentially hazardous hot melt adhesive vapors
- Risk of pinching around swivel holder (20, Fig. 3) and guide rod (12, Fig. 4).

3. Manual References

The position numbers in the illustrations do not correspond to the position numbers in the technical drawings and the spare parts lists.

4. Functioning

**NOTE:** Figure 2 shows the essential components of the application head with edge band guide attached. Figure 3 shows the application head and figure 4 the edge band guide. The included technical drawings contain fine details.

The adhesive flows from the melter through the heated hose, into the application head and then to the surface nozzle. The surface nozzle and the adjustable slide in the nozzle slit (8, Fig. 3) form the nozzle. The adhesive supply to the surface nozzle is switched on and off with an electropneumatic control module.

The adhesive width can be steplessly adjusted between 10 mm and the maximum application width (according to type designation) during operation. The current application width can be seen on a scale on the body at any time. The size of the nozzle slit is standardly set to 0.5 mm.

When the unit is operated without the edge band guide, the edges to be coated with hot melt adhesive are guided past the nozzle slit.

When the unit is operated with the edge band guide, the edge bands are guided past the nozzle slit of the application head through the guide. For the duration of application, the guide rod (12, Fig. 4) of the swivel holder presses the edge band against the nozzle slit. A pneumatic cylinder initiates the swiveling motion.

**Heating**

Electrical heater cartridges are used to heat the unit. The temperature is continuously measured by a temperature sensor and regulated by an electronic temperature controller usually located in the electrical cabinet of the melter.
5. **ID Plate**

![ID Plate Image]

<table>
<thead>
<tr>
<th>Type of application head</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordson order number</td>
<td></td>
</tr>
<tr>
<td>Serial number</td>
<td></td>
</tr>
<tr>
<td>Operating voltage</td>
<td>V = Volt</td>
</tr>
<tr>
<td>Power consumption</td>
<td>W = Watt</td>
</tr>
</tbody>
</table>

**Fig. 1**

6. **Various Models**

Because the unit is continuously being modified and improved, there are several models of the application head. Thus illustrations in this manual may deviate from the actual design. More detailed illustrations can be found in the included technical drawings.

**NOTE:** The following table contains only the order numbers (P/N) for the heads without edge band guide.

<table>
<thead>
<tr>
<th>P/Ns</th>
<th>Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>456583</td>
<td>Prototype</td>
</tr>
<tr>
<td>444230</td>
<td>• Slimmer shape</td>
</tr>
<tr>
<td>783943</td>
<td>• Control module simple to operate</td>
</tr>
<tr>
<td>786997</td>
<td>• Control module with stem stroke adjustment</td>
</tr>
<tr>
<td>786999</td>
<td>• Floating nozzle insert</td>
</tr>
<tr>
<td>219143</td>
<td>• Suction stem control module:</td>
</tr>
<tr>
<td>789740</td>
<td>- Modified nozzle stem/insert design</td>
</tr>
<tr>
<td></td>
<td>- Dual function control module (Both <em>open</em> and <em>close</em> require control air)</td>
</tr>
<tr>
<td></td>
<td>- Without nozzle stem stroke adjustment</td>
</tr>
<tr>
<td></td>
<td>• Solenoid valve control not via head connection but through separate cable.</td>
</tr>
<tr>
<td>Models <em>EB ... V-M</em></td>
<td>• Nozzle stem with retractable metal protector</td>
</tr>
<tr>
<td></td>
<td>• Simple control module</td>
</tr>
</tbody>
</table>

**Areas of Use**

The application head is intended to be used especially for edge banding applications of PUR and other hot melt adhesives common in the wood working industry to wooden boards (_substrate_).

In conjunction with the application head, the edge band guide is used to apply hot melt adhesives to edge bands.

Models without stands or swivel holders (23, 20, Fig. 3) are suited for horizontal mounting, e.g. to be used for _filter gluing_.

---

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EB ... V / EB ... V-M

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7. **Components of the Application Head**

**NOTE:** The actual model can deviate from the illustrations.

![Diagram of Application Head with Edge Band Guide](image)

**Fig. 2** Application head with edge band guide

1. Edge band guide  
2. Application head  
3. Sliding plate*  
4. Adapter plate

**Note:** The part marked with an asterisk (*) is removed for installation of the edge band guide.
Fig. 3  Application head without edge band guide

1  Solenoid valve  
2  Control air connection  
3  Control module  
4  Star knob Adjusting device  
5  Hose connection fitting  
6  Adjusting device  
7  Surface nozzle  
8  Nozzle slit  
9  Sliding plate*  
10  Screws for sliding plate*  
11  Screw-on stopper  
12  Screws for electrical components cover*  
13  Body  
14  Adjusting screws  
15  Fastening screws  
16  Cylinder screws connecting piece*  
17  Pressure spring  
18  Connecting piece (E cover)  
19  Vertical limit stop  
20  Swivel holder  
21  Clamp fixing device  
22  Fine height adjustment  
23  Stand  
24  Power cable  

Note: When installing the edge band guide, the parts marked with an asterisk (*) are either needed or replaced.
5. **Components of the Application Head** (contd.)

![Diagram of edge band guide]

**Fig. 4** Edge band guide

1. Guide
2. Guide adjuster
3. Compressed air connection
4. Banjo bolt air connection
5. Swivel shaft *
6. Swivel holder
7. Screws *
8. Cylinder connection *
9. Height adjustment for production reference point
10. Tension screws for aligning guide rod
11. Knurled screw for releasing guide rod
12. Guide rod
13. Upper draw-in guide (adjustable)
14. Lower draw-in guide
15. Screws for adapter plate *
16. Stroke adjuster (stroke limit)
17. Banjo bolt for air connection cylinder
18. Cylinder
19. Solenoid valve

Note: The parts marked with an asterisk (*) are either needed to install the edge band guide or replace parts of the application head.
Installation

1. **Unpacking**
   Unpack carefully. Then check for any damage caused during shipping. Reuse packaging materials or dispose of according to local regulations.

2. **Transport**
   The hot melt application head is a high precision, valuable part. Handle very carefully! Protect the nozzle from damage.

3. **Storage**
   Do not store outside! Protect from humidity and dust. Do not lay unit on the nozzle. Protect the nozzle from damage.

4. **Disposal**
   When your Nordson product has exhausted its purpose and/or is no longer needed, dispose of it according to local regulations.

5. **Installation**
   When installing the application head, the following points should be observed in order to avoid unnecessary effort later.
   - Models with stands (23, Fig. 3) are to be mounted vertically (nozzle should be vertical).
   - The direction of application (in relation to the path direction of the substrate) can be modified from application direction left to application direction right without any additional components (Refer to Changing Direction of Application).
   - Ensure that adhesive fumes do not exceed the prescribed limits. Suction off adhesive fumes. Ensure sufficient ventilation of the surroundings.
   - Protect from humidity, vibrations, dust and drafts.
   - Ensure easy access to parts relevant to maintenance and operation.
   - When installing the unit, ensure that cables, air hoses and heated adhesive hoses can not be bent, pinched, torn off or otherwise damaged.

**NOTE:** The following illustrations and procedures refer to models with stands. Proceed correspondingly for models without stands.
5. **Installation (contd.)**

**Changing Direction of Application for Edge Banding**

Depending on the application, the application head may need to be used with or without the edge band guide, or the direction of application may need to be changed.

The application head is used without the edge band guide for edge banding. When required, detach edge band guide as described under *Installing/Removing Edge Band Guide*.

**WARNING:** Risk of pinching! Be aware of the spring restoring force between the swivel holder and the clamp fixing device.

1. Release clamp lever (3) and detach application head from stand.

2. Remove both cylinder screws (1) from connecting piece to separate body and holder.

3. Unscrew fine height adjustment on the swivel holder and screw on to the opposite side.

4. Move pressure spring (17, Fig. 3) to the other side of the clamp fixing device. To do this, loosen hexagon head screw (2) and pull out bolt from clamp fixing device.

5. Release vertical limit stop (19, Fig. 3), detach from stand then re-attach the other way and tighten.

6. Put clamp fixing device and swivel holder back onto the stand the other way, such that the cylinder pin positions the clamp fixing device in the clamp limit stop.

7. Join body and holder. To do this, screw connecting piece onto swivel holder using both cylinder screws (1).

8. Unscrew surface nozzle, modify it, then screw it back on such that the nozzle slit is on the other side of the body (Refer to *Adapting surface nozzle to direction of application*).

9. Reposition hose connection fitting (Refer to *Adapting hose connection fitting to direction of application*).

10. Reposition sliding plate.
Adapting surface nozzle to direction of application

When the direction of application is changed (Refer to Changing Direction of Application) the surface nozzle must be correspondingly modified. If adhesive has already been processed, modification must occur when the application head is heated (at least to the softening temperature of the adhesive).

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

1. Unscrew the two cylinder screws (2) from the surface nozzle and detach surface nozzle from body.

2. Extract piston (4) as follows:

   **WARNING:** Risk of injury! The sharp-edged slide (5) moves out of the application slit along with the piston.
   
   a. As an aid, stick a thin rod (e.g. a screw) through the hole (3) in the piston.
   
   b. Turn the piston counterclockwise approx. half a revolution.
   
   c. Extract piston.

3. Unscrew cover (7) from surface nozzle and detach along with the surface seal (6). To do this, screw one of the screws into the forcing thread in the cover.

   **CAUTION:** Do not use metallic tools to clean. Do not use wire brushes! This could damage the non-stick coating.

   **NOTE:** Thoroughly clean adhesive residue from all parts and sealing surfaces. Use a cleaning agent recommended by the adhesive manufacturer.

4. Use pins to attach cover with surface seal on the other side of the surface nozzle.

5. Carefully slide piston back in.

---

Fig. 7 Direction of application:
A = left
B = right
5. Installation (contd.)

Adapting surface nozzle to direction of application (contd.)

6. Turn the piston clockwise approx. half a revolution.

7. Screw surface nozzle onto body. Set the adjusting device such that the piston fits into the receptacle (1).

Adapting hose connection fitting to direction of application

If adhesive has already been processed, modification must occur when the application head is heated (at least to the softening temperature of the adhesive).


If the direction of application is changed (Refer to Changing Direction of Application), the hose connection fitting must be moved to the other side. To do this, exchange screw-on stopper (11, Fig. 3) and hose connection fitting (5, Fig. 3).
1. Make three thread bore holes M 8 in a suitable place on the parent machine. Take into consideration the recommended angle of incidence (Refer to Fig. 9).

2. Use the adjustment screws to align the stand such that it is parallel to the substrate, then screw on.

---

**Fig. 8** Thread bore holes

**Fig. 9** Angle of incidence
**Adjusting Height and Angle of Incidence**

**WARNING:** Risk of pinching! Be aware of the spring restoring force between the swivel holder and the clamp fixing device.

**WARNING:** Risk of pinching! Support the application head when releasing the clamp lever and the vertical limit stop.

1. Loosen both screws (1) on the connecting piece.
2. Release clamp lever (3) and vertical limit stop (19, Fig. 3).
3. Turn and slide the application head on the stand such that the surface nozzle moves to a suitable position in relation to the substrate. Roughly set angle of incidence as shown in Fig. 10.
4. Tighten clamp lever and vertical limit stop.
5. Tighten both screws (1).
6. Make fine adjustments to the height with the snap-in screw (2) if necessary.
7. If necessary, make fine adjustments to the angle of incidence and thus to the pressure:
   a. Release locknut on the screw (4).
   b. Use the screw (4) to adjust the angle of incidence.
   c. Tighten locknut.
The application head is used with the edge band guide for applying adhesive to edge bands. When required, install edge band guide as described in this section. Perform the steps in reverse order to remove the edge band guide.

**WARNING:** Risk of pinching! Be aware of the spring restoring force between the swivel holder and the clamp fixing device.

1. Remove screws (2, Fig. 11) and sliding plate (1, Fig. 11).
2. Remove both cylinder screws (1, Fig. 5) from connecting piece to detach body and holder.
3. Remove screws for electrical components cover (3, Fig. 11).
4. Remove bottom screw (4, Fig. 11) from connecting piece.
5. If necessary, adjust edge band guide to direction of application. Refer to *Adapting Edge Band Guide to Direction of Application*.
6. Screw edge band guide with swivel shaft (1, Fig. 12) onto connecting piece (4, Fig. 11).
7. Pass screws (2, Fig. 12) through cylinder connection (3, Fig. 12) and cover for electrical components of application head (3, Fig. 11) and screw onto casing.
8. Pass screws (5, Fig. 12) through adapter plate (4, Fig. 12) and screw onto application head.
Adapting Edge Band Guide to Direction of Application

The edge band guide can be converted from direction of application left to direction of application right without additional parts. When required, the edge band guide is to be detached from the application head. Refer to Installing/Removing Edge Band Guide.

Refer to Fig. 14.

1. Remove screws (2), then detach guide (1) from guide holder (3).
2. Remove lower screw (4) from swivel shaft, then remove washers and guide holder.
3. Remove cylinder screws (19) from swivel holder (21).
4. Release banjo bolts (20) for air connections.
5. Remove knurled screw (14) and guide rod (13).
6. Unscrew holder (7) from adapter plate (16), release stud screw in the holder (8), remove screw (9), screw spindle (12) all the way out of the holder (8), then remove draw-in shaft (11) with draw-in guides.
7. Screw holder (7) onto the opposite side of the adapter plate (16). Insert draw-in shaft (11) such that the draw-in guides rest on the adapter plate. Screw holder (10) with screw (9) onto draw-in shaft (11). Tighten stud screw in holder (8). Screw spindle (12) into holder (8).
8. Detach swivel holder (21) from swivel shaft, turn it and then place it on the swivel shaft again. Put washers and guide holder back into place, then tighten screw (4).
9. Install guide rod (13) again.
10. Turn cylinder and air connections, then screw cylinder onto swivel holder.
11. Tighten banjo bolts (20) for air connections.
12. Attach guide (1) to guide holder (3).

Fig. 13 Direction of application:
A = left
B = right
6. Electrical Connection

WARNING: Observe voltage values found on the ID plate of the application head, the edge band guide and solenoid valves.

1. Join connecting cable (24, Fig. 3) to heated hose socket.

2. Fasten the plug connection with the securing ring - when present.

3. Establish electrical connection between solenoid valves and control unit.

Laying Cable

WARNING: Ensure that cables do not touch rotating and/or hot parts. Do not pinch cables. Check regularly for damage. Replace damaged cables immediately!
The application head may only be connected to pressure-controlled and conditioned compressed air.

**Compressed Air Filter (Accessory)**

Safe operation and lifetime of pneumatically driven application heads essentially depend on conditioning of the compressed air. Dust or condensation will increase the wear on sliding surfaces and sealing elements, thereby causing damage. Thus the compressed air should be conditioned with a compressed air filter with water separator. The air conditioning unit cleans and dries the compressed air.

**NOTE:** The filter mesh size may not exceed 40 μm.

**Operating with Non-lubricated Control Air**

When control modules / application heads are connected to a compressed air system in which the compressed air has previously been lubricated, simply ceasing to lubricate the air is not sufficient. The lubricant remaining in the compressed air supply will penetrate the solenoid valves and the control modules and wash out the grease/lubricant applied at the factory, substantially reducing the lifetime of these parts.

To operate the unit with non-lubricated control air, ensure that:

- The system is set to non-lubricated operation
- No oil can leak from a defective compressor and penetrate the compressed air supply.

**NOTE:** Nordson will assume no warranty/liability for damage resulting from unpermitted, temporary lubrication.

**Operating with Lubricated Compressed Air**

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

**NOTE:** Once the air has been lubricated, it must always be lubricated. Otherwise the lubricated compressed air will wash out the 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>316 578</td>
</tr>
</tbody>
</table>
Connecting Compressed Air

Application head

1. Connect an adjustable air supply to the connection fitting (2, Fig. 3) for control air.

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.

NOTE: Ensure that control air is on at all times. It keeps the control module closed when EMERGENCY OFF occurs or when the system comes to a standstill. This prevents hot melt material from dripping out of the nozzle.

NOTE: Ensure that the material inlet is relieved of pressure when the control air is switched off. Otherwise the control module will open, and material will flow out.

Edge band guide

1. Connect an adjustable air supply to the connection fitting (3, Fig. 4) for control air.

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.

8. Exhausting Adhesive Vapors

Ensure that adhesive vapors do not exceed the prescribed limits. Always observe the safety data sheet for the material to be processed. Exhaust adhesive vapors if necessary. Provide sufficient ventilation in the area where the machine is set up.
9. Installing Heated Hoses

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

**Connecting**

If there is cold adhesive in the hose connection fitting (1) and/or hose connection (2), these components must be heated until the hot melt material softens.

1. First connect the hose (3) electrically to the unit.
2. Heat application head and hose until the adhesive softens.
3. Screw the hose onto the unit.

**Fig. 15**

**Disconnecting**

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

**Relieving pressure**

1. Set motor speed(s) of the unit feeding the material to 0 min⁻¹; switch off motor(s).
2. Place a reservoir under the nozzle of the application head.
3. Activate the solenoid valve electrically or manually. Repeat this procedure until no more hot melt material flows out.
4. Re-use adhesive or dispose of properly according to local regulations.

**Second open-jawed wrench**

Using a second open-jawed wrench prevents the hose connection fitting on the unit from turning.

**Fig. 16**
Operation Application Head

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

1. Importance when Using 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 extended standstill of the application system, rinse with a suitable cleaning agent and set to minimum application width. Use only a cleaning agent recommended by the material manufacturer.
   
   • Close open material connections airtight.

   When the system is to cease operation for only a short time, it suffices to coat the application slit with grease. Nordson recommends special high temperature grease. Refer to Processing Materials.

2. Triggering Solenoid Valve

   CAUTION: Trigger the solenoid valve only when the application head is heated to operating temperature! Seals in the control module can become damaged if the adhesive is too cold.

3. Setting Temperatures

   The procedure for setting the temperatures is described in the temperature controller manual. Temperature controllers are not part of the application head. They can be located e.g. in the electrical cabinet of a hot melt application unit or in a separate electrical cabinet.

   Maximum Operating Temperature

   200 °C / 392 °F

   NOTE: When setting the temperature, the temperature prescribed by the hot melt adhesive manufacturer is decisive. The maximum operating temperature for the product and heated components described here may not be exceeded.

   Nordson will assume no warranty or liability for damage resulting from incorrect temperature settings.
4. Setting Application Width and Coating Quantity

**CAUTION:** Adjust application width only when the application head is heated. The seals will be damaged if it is adjusted when the adhesive is cold.

1. Set desired application width with knob (2). The set application width is shown on the scale (3).

**NOTE:** The application width can be adjusted steplessly between 10 mm and the maximum application width (according to type designation).

The adhesive quantity needed depends on the desired adhesive application weight and on the production speed. It is usually preselected using the pump speed dials. The optimum setting must be determined by trial and error.

The speed dials are located e.g. in the electrical cabinet of an adhesive applicator or in a separate electrical cabinet.

**NOTE:** Depending on the model of the adhesive application system, the pump speed may be regulated by a tachometer generator, by a pressure control unit or by an application quantity control unit.
**Adjusting Nozzle Stem Stroke on Control Module**

**NOTE:** Only some models of the application head have a stem stroke adjuster (1, Fig. 17).

As the control module closes, the nozzle stem presses a small amount of material out of the surface nozzle. Thus for an application with a low application quantity, the nozzle stem stroke should be set small to keep the material quantity as low as possible.

This is not necessary when the application head is equipped with a suction stem control module: The nozzle stem sucks material back out of the nozzle area when the control module is closed. This desired effect can be amplified when a special nozzle insert is used (Refer to Maintenance, Replacing Nozzle Insert).

**NOTE:** The stem stroke adjustment knob has no upper setting limit; starting from the bottom, it may only be turned a maximum of 8 turns upward. This corresponds to a nozzle stem stroke of maximum 4 mm.

<table>
<thead>
<tr>
<th>Stem stroke</th>
<th>Flow rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counterclockwise (+) = increase</td>
<td>Increase</td>
</tr>
<tr>
<td>Clockwise (-) = decrease</td>
<td>Decrease</td>
</tr>
</tbody>
</table>
Operating Edge Band Guide

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

1. **Settings**

   Trigger the solenoid valve only when the edge band is to be coated.

   Refer to Fig. 19.

   The cylinder swivels the swivel holder (6), thus swiveling the guide rod (12) to the application head nozzle.

   **Aligning Guide Rod**

   Release screws (10), move swivel holder (6) to stroke limit, and align guide rod parallel to nozzle edge using suitable measurement devices. Tighten screws. Check settings again.

   **Limiting Stroke**

   Using the setting screw on the stroke adjustment (16), set the swivel arm stroke such that the hot melt adhesive coming out of the nozzle is applied securely to the edge band.

   **Adjusting Production Height**

   Release screw and draw-in guide (13). Set the draw-in guide to the product height (height of edge band) such that the product can be easily moved between the draw-in guides.

   **Adjusting Production Reference Point**

   During operation, the height of the lower edge of the edge band can be adjusted in relation to the production line within a range of 2.5 mm. Set the height production zero point (9) accordingly.

   **Adjusting Guide**

   Set guide (1) such that transport of the edge band is optimized.
Fig. 19  Edge band guide
## 2. Settings Record Form

### Production Information

<table>
<thead>
<tr>
<th>Adhesive</th>
<th>Manufacturer</th>
<th>Softening temperature</th>
<th>Max. processing temperature</th>
<th>Viscosity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cleaning agent</th>
<th>Manufacturer</th>
<th>Max. softening temperature</th>
<th>Flash point</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Basic Settings</th>
<th>Control air pressure</th>
<th>Application width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application head</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperatures</th>
<th>Application head</th>
<th>Setpoint</th>
<th>Undertemperature</th>
<th>Overtemperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application head</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes

Form filled out by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></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.

### 1. Relieving Pressure

**WARNING:** System and hot melt material pressurized. Before disconnecting heated hoses and replacing filter cartridges, relieve system pressure. 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) of the melter to 0 min⁻¹ (rpm); switch off motor(s).
2. Place a reservoir under the nozzle of the application head.
3. Activate the solenoid valve electrically or manually. Repeat this procedure until no more hot melt material flows out.
4. Re-use adhesive or dispose of properly according to local regulations.
2. Maintenance Table

The stated intervals are based on general experience. Depending on the location of the unit, the production conditions and the operating time, 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>Complete application system</td>
<td>Rinse with cleaning agent</td>
<td>When changing adhesive,</td>
<td>Page 33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>if the adhesives used can not be</td>
<td>Observe adhesive manufacturer's instructions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mixed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Before prolonged production</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>interruptions, if PUR adhesive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>is processed</td>
<td></td>
</tr>
<tr>
<td>Complete application head</td>
<td>Inspection for damage</td>
<td>Daily</td>
<td>Page 26</td>
</tr>
<tr>
<td>External cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nozzle slit, surface nozzle</td>
<td>External cleaning</td>
<td>Daily</td>
<td>Page 27</td>
</tr>
<tr>
<td>Disassemble and clean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>Replace</td>
<td>When damaged</td>
<td>Page 32</td>
</tr>
<tr>
<td>Sliding plate</td>
<td>Replace</td>
<td>When worn</td>
<td></td>
</tr>
<tr>
<td>Control module</td>
<td>Check leakage hole</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace</td>
<td>When leaking</td>
<td>Page 28</td>
</tr>
<tr>
<td>Edge band guide</td>
<td>Inspection for damage</td>
<td>Daily</td>
<td>Page 26</td>
</tr>
<tr>
<td></td>
<td>Guide rod: Cleaning</td>
<td>As needed</td>
<td>Page 27</td>
</tr>
<tr>
<td>Adapter plate</td>
<td>Replace</td>
<td>When worn</td>
<td></td>
</tr>
<tr>
<td>Guide rod</td>
<td>Replace</td>
<td>When worn</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The leakage hole is the hole in the control module casing through which the nozzle stem can be seen.

3. Inspection for External Damage

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

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

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

- **CAUTION:** Do not use metallic tools to clean. Do not use wire brushes! This could damage the non-stick coating.

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

Remove adhesive residue with a cleaning agent recommended by the adhesive manufacturer whenever possible. Heat with an air heater if necessary. Remove dust, fluffs, etc. with a vacuum cleaner or a soft cloth.

1. Remove hot melt material residue from the nozzle promptly with a soft cloth. This should be done before the material cracks.

2. Remove tough and hardened residue with a wooden or PTFE spatula if necessary.

---

**Edge Band Guide: Guide Rod**

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

Remove adhesive residue from guide rod (12, Fig. 19) when necessary. To do this, release the knurled screw (11, Fig. 19) far enough that the guide rod can be swiveled out of its clamp. Clean guide rod with a soft cloth, using a suitable solvent when necessary.

Return guide rod to normal position and tighten knurled screw. Ensure that no impurities penetrate the guide rod receptacle. Verify that the guide rod is parallel to the nozzle edge.
5. **Replacing Control Module, Nozzle Insert**

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

**WARNING:** To prevent cold adhesive from damaging seals, control module and - when appropriate - nozzle insert should be replaced only when the application head is heated.

**NOTE:** The procedure for replacing the parts differs according to the application head model. Also refer to *Description, Various Models*. Neither the control module nor the nozzle insert may be replaced by the customer on models *EB ... V-M*. Instead, the entire application head (without the web guide, bracket and nozzle) must be replaced when there is a defect.

### Models without Suction Stem Control Module

**Replacing control module**

1. Heat application head until adhesive is soft.
2. Relieve pressure.
3. Disconnect compressed air hoses.
4. Release fastening screws and replace control module.
5. Screw new control module into place.
6. Connect compressed air hoses again.

**NOTE:** The nozzle insert is the part in which the nozzle stem of the control module blocks or releases the material flow. Older application head models use a body with integrated nozzle insert instead.

**Replacing nozzle insert**

1. Remove control module (Refer to *Replacing control module*).
2. Extract screws (4) and plugs (3). Use a pin extractor if necessary.
3. Use a wooden or plastic rod to slide the floating nozzle insert (2) out the bottom.
4. Always replace O-rings on the nozzle insert and plug.

![Diagram](002622)

**Fig. 20**

1. Nozzle stem
2. Floating nozzle insert
3. Plug
4. Screw
Models EB ... V with Suction Stem Control Module

NOTE: Neither the control module nor the nozzle insert may be replaced by the customer on models EB ... V-M.

It is not always necessary to replace the complete suction stem control module. Sometimes only individual parts need by replaced. Also refer to technical drawing and parts list.

CAUTION: If the application head is operated with non-lubricated control air, use high temperature grease GLS 595/N2 around the O-ring on the piston (3, Fig. 21). Refer to Processing Materials.

Replacing the Nozzle Insert on Models EB ... V

The nozzle insert can be replaced with the nozzle insert P/N 219141 to increase the retro suction effect. This is particularly recommended for materials that tend to form threads or to drip.

1. Heat application head until adhesive is soft.
2. Stop control air supply.
3. Extract screws (11) and plugs (10). Use a pin extractor if necessary.
4. Release screws on the cylinder (1) and remove the cylinder and solenoid valve.
5. Release screw (2). Use a socket wrench, size 5.5 mm, to hold onto the nozzle stem (9).
6. Extract nozzle stem with connecting rod (7) and piston rod (6) out the bottom; pull piston (3), spring (4) and socket block (5) out the top.
7. Use a wooden or plastic rod to slide the floating nozzle insert (8) out the bottom.
8. Always replace O-rings on the nozzle insert and plug.
9. Use a screw securing compound when assembling (Refer to Processing Materials):
   - Screw (2) / connecting rod (7): Loctite activator 7471 and Loctite screw securing compound 241
   - Connecting rod (7) / nozzle stem (9): Loctite activator 7471 and Loctite screw securing compound 620.
10. Before starting up again, heat the attached application head to 200° C / 392° F for 40 minutes to allow the screw securing compound to harden.
6. **Disassembling and Cleaning Surface Nozzle**

**CAUTION:** Use only a cleaning agent recommended by the adhesive manufacturer. Observe the Manufacturer Safety Data Sheet (MSDS) for the cleaning agent.

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

**CAUTION:** To prevent damage to the coating, use protective chops when clamping surface nozzle parts in a vice.

1. Heat application head to operating temperature.

2. Unscrew the two cylinder screws (2) from the surface nozzle and detach surface nozzle from body.

3. Extract piston (4) as follows:

   **WARNING:** Risk of injury! The sharp-edged slide (6) moves out of the application slit along with the piston.

   a. As an aid, stick a thin rod (e.g. a screw) through the hole (3) in the piston
   
   b. Turn the piston counterclockwise approx. half a revolution
   
   c. Extract piston.

4. Unscrew cover (11) from surface nozzle and detach along with the surface seal (10). To do this, screw one of the screws into the forcing thread in the cover.

5. Detach mouthpiece (9) from mouthpiece receptacle (8):

   a. Extract three cylinder screws
   
   b. Knock out pins.

6. Use suitable tools (wooden or plastic) to remove cracked hot melt adhesive from the holes and channels.

7. Use a cleaning agent to dissolve adhesive residue that could not be removed mechanically.
8. Check seals, replace if necessary (Refer to Replacing Seals).

9. Assemble surface nozzle:
   a. Use pins to join mouthpiece and mouthpiece receptacle, then screw together.
   b. Put cover with surface seal in place, then tighten.
   c. Loosely screw together bottom section of piston (7) and top section of piston (4) until limit stop is reached.
   d. Carefully slide piston back in.
   e. Turn the piston clockwise approx. half a revolution to tense piston seal (5).

10. Screw surface nozzle onto body. Set the adjusting device such that the piston fits into the receptacle (1).

**NOTE:** Properly dispose of cleaning agent, adhesive residue and cutting oil according to local regulations.
7. Replacing Seals

Piston Seal

1. Unscrew surface nozzle from body and extract piston (Refer to Disassembling and Cleaning Surface Nozzle).

2. Use a screwdriver to unscrew lower section of piston (4) from upper section of piston (2).

3. Pull the piston seal (3) up to remove it, then replace it with a new seal (P/N 456 595).

4. Loosely screw together bottom section of piston and top section of piston until limit stop is reached.

5. Carefully slide piston back in.

6. Turn the piston clockwise approx. half a revolution to tense piston seal (3).

7. Replace sealing ring (P/N 250 249) between body and surface nozzle.

8. Screw surface nozzle onto body. Set the adjusting device such that the piston fits into the receptacle (1, Fig. 20).

Surface Seal

1. Unscrew cover (2) from surface nozzle and detach along with the surface seal (1). To do this, screw one of the screws into the forcing thread in the cover.

2. Clean sealing surfaces.

3. Put new cover with surface seal (P/N 444 246) in place and tighten.
8. **Rinsing with Cleaning Agent**

**CAUTION:** Use only a cleaning agent recommended by the adhesive manufacturer. Observe the Manufacturer Safety Data Sheet (MSDS) for the cleaning agent.

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

1. Empty the melter and fill with cleaning agent.
2. Heat up heated system components. Comply with maximum heating temperature of cleaning agent.
3. Place a suitable reservoir under the nozzle.
4. Set the speed and pressure of the melter to the lowest values.
5. Set application width to Maximum (Refer to Setting Application Width and Coating Quantity).
6. Activate the solenoid valve electrically or manually.
7. Switch on melter.
8. Continue to convey the cleaning agent until the cleaning agent flowing out of the unit no longer contains adhesive residue.

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

**NOTE:** Rinse out cleaning agent residue with new adhesive before beginning production.
## 9. Maintenance Record Form

<table>
<thead>
<tr>
<th>Unit Part</th>
<th>Activity</th>
<th>Date</th>
<th>Name</th>
<th>Date</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application head</td>
<td>Rinse with cleaning agent</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Surface nozzle</td>
<td>Disassemble and clean</td>
<td></td>
<td></td>
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<tr>
<td>Seals</td>
<td>Replace</td>
<td></td>
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<td></td>
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<tr>
<td>Sliding plate</td>
<td>Replace</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Control module</td>
<td>Replacing nozzle insert</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Edge band guide</td>
<td>Replace adapter plate</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Edge band guide</td>
<td>Replace guide rod</td>
<td></td>
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</tr>
</tbody>
</table>
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.

**WARNING:** Troubleshooting activities may sometimes have to be carried out when the unit is energized. Observe all safety instructions and regulations concerning energized unit components (active parts). Failure to observe may result in an electric shock.

1. **Troubleshooting Table**

When troubleshooting, other components of the application system may need to be considered.

The troubleshooting tables serve as an orientation for qualified personnel. They cannot, however, replace targeted troubleshooting with the help of wiring diagrams and measuring instruments. They also do not include all possible problems, only those which most typically occur.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>No adhesive</td>
<td>Application head has not yet reached operating temperature</td>
<td>Wait until temperature has been reached, check temperature setting if necessary</td>
<td>Page 13</td>
</tr>
<tr>
<td></td>
<td>Not enough adhesive in the application unit</td>
<td>Fill</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pump of the hot melt material application unit does not work</td>
<td>Check</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Control air not connected</td>
<td>Connect</td>
<td>Page 11</td>
</tr>
<tr>
<td></td>
<td>Nozzle slit blocked</td>
<td>Disassembling and Cleaning Surface Nozzle</td>
<td>Page 30</td>
</tr>
<tr>
<td></td>
<td>Nozzle stem is stuck</td>
<td>Replacing control module</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Feed port is blocked by piston because application width is set to less than 10 mm</td>
<td>Application width set to greater than 10 mm</td>
<td>Page 14</td>
</tr>
<tr>
<td>No adhesive: application head is cold</td>
<td>Temperature not correctly set on temperature controller</td>
<td>Set correct temperature</td>
<td>Page 13</td>
</tr>
<tr>
<td></td>
<td>Plug has no contact</td>
<td>Secure plug</td>
<td>Page 10</td>
</tr>
<tr>
<td></td>
<td>Heater cartridge(s) defective</td>
<td>Replace heater cartridge(s)</td>
<td>-</td>
</tr>
</tbody>
</table>
## 1. Troubleshooting Table (contd.)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adhesive application is not exact</strong></td>
<td>Nozzle slit partially blocked or damaged</td>
<td>Disassemble and clean surface nozzle, replace if necessary</td>
<td>Page 30</td>
</tr>
<tr>
<td></td>
<td>Application head does not have even contact with the substrate</td>
<td>Check height and angle of incidence, adjust if necessary</td>
<td>Page 12</td>
</tr>
<tr>
<td></td>
<td>Sliding plate worn</td>
<td>Replace sliding plate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seals worn</td>
<td>Replace seals</td>
<td>Page 32</td>
</tr>
<tr>
<td></td>
<td>Production parameters not attuned to one another</td>
<td>Adjust parameters, change if necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Application width set incorrectly</td>
<td>Adjust application width and coating quantity</td>
<td>Page 20</td>
</tr>
<tr>
<td></td>
<td>Unsuitable adhesive</td>
<td>Consult adhesive manufacturer</td>
<td>Data sheet</td>
</tr>
<tr>
<td><strong>The open time is too long</strong></td>
<td>Application temperature too high</td>
<td>Set temperature lower</td>
<td>Page 19</td>
</tr>
<tr>
<td></td>
<td>Unsuitable adhesive</td>
<td>Consult adhesive manufacturer</td>
<td>Data sheet</td>
</tr>
<tr>
<td><strong>The open time is too short</strong></td>
<td>Application temperature too low</td>
<td>Set temperature higher</td>
<td>Page 19</td>
</tr>
<tr>
<td></td>
<td>Unsuitable adhesive</td>
<td>Consult adhesive manufacturer</td>
<td>Data sheet</td>
</tr>
<tr>
<td><strong>Edge band is jammed</strong></td>
<td>Stroke set incorrectly</td>
<td>Limit stroke sooner</td>
<td>Page 22</td>
</tr>
<tr>
<td></td>
<td>Draw-in guides set too close together</td>
<td>Set upper draw-in guide slightly higher</td>
<td>Page 22</td>
</tr>
<tr>
<td><strong>Edge band is not coated</strong></td>
<td>Stroke set incorrectly</td>
<td>Limit stroke later</td>
<td>Page 22</td>
</tr>
<tr>
<td></td>
<td>Application head does not feed adhesive</td>
<td>Refer to <em>No adhesive</em></td>
<td>Page 22</td>
</tr>
<tr>
<td><strong>Edge band is not completely coated</strong></td>
<td>Guide rod aligned incorrectly</td>
<td>Align guide rod parallel</td>
<td>Page 22</td>
</tr>
<tr>
<td><strong>Height is not set to production reference point</strong></td>
<td>Application head set incorrectly</td>
<td>Re-adjust application head</td>
<td>Page 11</td>
</tr>
<tr>
<td></td>
<td>Production reference point for edge band guide set incorrectly</td>
<td>Production reference point can be corrected within a range of 2.5 mm with the height adjustment for production reference point.</td>
<td></td>
</tr>
</tbody>
</table>
# Technical Data

## 1. Operating Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating temperature</td>
<td>200 °C 392 °F</td>
</tr>
<tr>
<td>Maximum operating air pressure</td>
<td>6 bar 0,6 MPa 87 psi</td>
</tr>
<tr>
<td>Maximum adhesive pressure at inlet</td>
<td>70 bar 7 MPa 1015 psi</td>
</tr>
<tr>
<td>Note:</td>
<td>Ensure that the material inlet is relieved of pressure when the control air is switched off. Otherwise the control module will open, and material will flow out.</td>
</tr>
<tr>
<td>Adhesive viscosity that can be processed</td>
<td>10000 mPas to 100000 mPas (10000 cP to 100000 cP)</td>
</tr>
<tr>
<td>Application quantity</td>
<td>330 - 1200 g/min (at an application width of 60 mm)</td>
</tr>
<tr>
<td>Application width</td>
<td>EB 60V, EB 60V-M: 10 - 60 mm</td>
</tr>
<tr>
<td></td>
<td>EB 100V, EB 100V-M: 10 - 100 mm</td>
</tr>
<tr>
<td>Nozzle slit size</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>Heating time</td>
<td>Approx. 20 min</td>
</tr>
</tbody>
</table>

## 2. Electrical Data

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater</td>
<td>Operating voltage: 230 VAC</td>
</tr>
<tr>
<td></td>
<td>Power consumption: Refer to ID plate</td>
</tr>
<tr>
<td>Solenoid valve application head</td>
<td>Operating voltage: 24 VDC</td>
</tr>
<tr>
<td></td>
<td>Power consumption: 8.5 W</td>
</tr>
<tr>
<td>Solenoid valve edge band guide</td>
<td>Operating voltage: 24 VDC</td>
</tr>
<tr>
<td></td>
<td>Power consumption: 4.0 W</td>
</tr>
</tbody>
</table>

## 3. Other Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight application head</td>
<td>Approx. 6.0 kg</td>
</tr>
<tr>
<td>Weight edge band guide</td>
<td>2.1 kg</td>
</tr>
<tr>
<td>Noise emission</td>
<td>&lt; 75 dBA</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP 50</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Refer to tecnical drawing</td>
</tr>
</tbody>
</table>
# Processing Materials

## High temperature grease

<table>
<thead>
<tr>
<th>Description</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube 250 g</td>
<td>783959</td>
</tr>
<tr>
<td>Cartridge 400 g</td>
<td>402238</td>
</tr>
</tbody>
</table>

**Caution:** Do not mix this lubricant with other lubricants! If necessary, first clean grease off of parts.

## Screw locking device

<table>
<thead>
<tr>
<th>Description</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw securing compound 241</td>
<td>789772</td>
</tr>
<tr>
<td>Screw securing compound 620</td>
<td>219353</td>
</tr>
<tr>
<td>Aktivator 7471</td>
<td>219186</td>
</tr>
</tbody>
</table>

**Warning:** Observe manufacturer’s safety instructions.