System combines flexibility and ease of maintenance in the precise application of two-component materials.

**Features and Benefits**

- **Modular design allows** for easy change-out of component materials, easy maintenance and repair.
- **System controller** maintains and coordinates dispensing to provide consistent bead size on parts.
- **Advanced diagnostics** indicate lack of system pressure, refill status for each material, excess pressure and volume faults.
- **Bulk unloader system** is designed to prevent base and catalyst materials from being used with the wrong pumps.
- **Robot-mounted dispensing gun** delivers material in extrude, stream or swirl patterns for added flexibility.

The Nordson Two-Component Dispensing System is a pedestal-mounted dispensing device developed specifically for the application of two-component materials.

The modular design of the system allows for easy change-out of components, as well as easy maintenance and repair of the metering modules by plant personnel.

Individual parts can be changed without replacing the entire metering assembly. All parts are mounted via pins and bolts to a base manifold, allowing part changes to be completed while the metering assembly is still mounted to the pedestal.

**Metering System**

The Nordson Two-Component Dispensing System incorporates positive displacement metering modules to precisely measure and dispense the mixed base and catalyst materials.

The dispensing ratios are fixed at 2:1, 4:1 or other ratios, as recommended by the material manufacturer. Ratios can only be changed by replacing the metering modules. No adjustment is necessary after change-out of base or catalyst materials.

The metering system easily accommodates materials that contain glass beads. Non-restrictive system passages, valves and orifices are designed to allow glass beads to pass through without obstruction.
Meter Operation

The system features a twin-shot meter-style dispensing system designed to meter and mix two-component materials. Both cylinders are driven from a common servo-motor with a dual ball screw to minimize the size and weight of the metering unit. Available in either aluminum or stainless steel, the unit’s small size allows for pedestal mounting close to the application point. Modular in design, each component is easily serviced without removing the meter from the workcell.

The metering cylinders are filled by positive pressure from a Nordson Rhino® bulk unloader. In turn, the on/off gun dispenses the base and catalyst materials into a common static mixing nozzle and onto the part.

Proportional Control

The Nordson two-component system provides precision dispensing and efficient material use by linking the material dispensing rate to the robot speed. The meter reacts to a 0-10 VDC signal sent from the robot, which is proportionate to the speed the robot travels. Base and catalyst materials are dispensed onto the part at the proper volume and ratio, and a uniform amount of adhesive is applied as the robot accelerates and decelerates along its programmed path. This precise flow control provides better adhesive bead profiles and faster cycle times.

System Controllers and Diagnostics

The system controller has extensive diagnostics and help screens to assist in system operation. The controller monitors the metering system to assure that both cylinders have refilled, to check that the correct amount of material has been dispensed, and that all pressures are within requirements. The controller also assures that fresh material is maintained in the system’s disposable static mixing tube.

Fault indications include:

- Mixer Tube Plugged
- Base Material Refill
- Catalyst Material Refill
- High/Low Volume
- High/Low Pressure (Base Material)
- High/Low Pressure (Catalyst Material)
- Mixer Tube Time-Out

Bulk Unloader Pumping System

Both the base and the catalyst materials used by the two component system are supplied using Nordson Rhino bulk unloaders. Two sets of twin pumps are used to deliver base and catalyst material from the bulk drums to the metering system.

The design, configuration and distinct labeling of the bulk unloaders used for the base and catalyst materials prevents confusion and virtually eliminates the possibility of mistakenly using base material as the supply for the catalyst pump and the catalyst material as the supply for the base pump. As an added precaution, optional 30-gallon bulk unloaders can be used for the catalyst material while standard 55-gallon bulk unloaders are used for the base material.

Both the catalyst and base material bulk unloader systems are equipped with automatic changeover units to allow for uninterrupted material supply and production.

An optional light tower can be used to inform operators when a drum of material needs to be changed.
Robot-Mounted Dispense Gun Provides Extrude, Stream or Swirl Patterns

A single, two-part on/off dispense gun, with negative pressure cut-off design to prevent dripping, is mounted at the end of the robot arm. Within the gun, base and catalyst components are kept separate until they enter a disposable static mixing tube. The static mixing tube is protected by a shroud that is quick-connected to the dispensing gun. The gun is designed to provide enough downward (closing) force to push glass beads out through the seat, and to provide clean shut-off.

For added flexibility, the dispense gun is capable of delivering material to the part in an extruded bead, a stream or a swirl spray with the change of a nozzle.

- The extrude option is ideal for conventional dispensing applications where a bead is applied to a simple part with good nesting and sheet metal tolerances. Extruding delivers closely controlled deposition and a consistent bead profile.

- When streaming material, part nesting and sheet tolerances are far less critical. Material is dispensed from a distance of one to three inches, eliminating the risk of the nozzle touching the part. Streamed material is delivered under high pressures effectively eliminating material sag in vertical applications.

- The swirl option is an innovative application using Nordson’s Controlled Fiberization (CF)™ technology to produce a helical pattern of adhesive. Material is drawn into a fine stream using high velocity air jets that rotate it into a spiral pattern on the substrate. A pattern of overlapping swirls is produced and material sagging is minimized.

The gun’s operational simplicity allows for easy adaptation to a wide range of part styles and application needs.

Temperature Conditioning System

All hardware in the Nordson Two-Component Dispensing System can be temperature conditioned. This includes the on/off gun, the meter and material hoses.

Temperature is maintained at +/- 2 degrees Fahrenheit to provide constant material viscosity. Constant viscosity results in a consistent bead profile on the part, regardless of changes in the ambient temperature inside the plant.
Servo-Driven Two-Component Dispensing System

Technical Specifications

**Metering Module (with stand)**

<table>
<thead>
<tr>
<th>Dimensions:</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight (Aluminum)</th>
<th>Weight (Stainless Steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52 in. (132 cm)</td>
<td>27 in. (68.6 cm)</td>
<td>43 in. (109 cm)</td>
<td>480 lbs. (217.75 kg)</td>
<td>530 lbs. (240.5 kg)</td>
</tr>
</tbody>
</table>

**Robot-Mounted Dispense Gun**

<table>
<thead>
<tr>
<th>Dimensions:</th>
<th>Height</th>
<th>Width</th>
<th>Length</th>
<th>Weight (Aluminum)</th>
<th>Weight (Stainless Steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.75 in. (9.53 cm)</td>
<td>3.25 in. (8.25 cm)</td>
<td>2.25 in. (5.72 cm)</td>
<td>3.6 lbs. (1.63 kg)</td>
<td>7.0 lbs. (3.17 kg)</td>
</tr>
</tbody>
</table>

**Controller**

<table>
<thead>
<tr>
<th>Dimensions:</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>73 in. (185.4 cm)</td>
<td>39 in. (99 cm)</td>
<td>12 in. (30.5 cm)</td>
<td>398 lbs. (180.5 kg)</td>
</tr>
</tbody>
</table>

**Bulk Unloader Pumping System**

**System Type**

Ram (elevator)-mounted, dual-action reciprocating piston pump.

**Air Consumption**

- 200 SCFM maximum instantaneous flow rate
- 10–20 SCFM typical continuous flow rate (depending on cycle rate)

**Supply Air Pressure**

70-100 PSI (482-689 kPa)

**Physical Dimensions:**

<table>
<thead>
<tr>
<th>Height</th>
<th>Width (approximate)</th>
<th>Baseplate</th>
<th>Mounting Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator Down: 62 in. (157 cm)</td>
<td>42 in. (107 cm)</td>
<td>Depth: 23 in. (58.42 cm)</td>
<td>Width: 39 in. (99.06 cm)</td>
</tr>
<tr>
<td>Elevator Up: 103 in. (262 cm)</td>
<td>790 lbs. (359 kg)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For more information, speak with your Nordson representative or contact your Nordson regional office.

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