Vermes MDS 3010+, Vermes MDS 3020+

Precision Microdispensing Jetting Valve for Low to Medium Viscosity

Description

The VERMES MDS 3010+ and MDS 3020+ microdispensing jetting valve systems are jetting valves for precision dispensing of material in small volumes at fast speeds with extremely high accuracy and repeatability. The rising miniaturisation of individual components in production processes demand smaller beads and lines for dispensing whilst increasing production throughput, process reliability and consistent repeatability.

Based on piezoelectric fluid jetting technology, the VERMES MDS 3010+ and MDS 3020+ allow for contactless application of materials at high speed with precision at a faster dispensing rate than those of pneumatic valve technologies.

The VERMES MDS 3010+ is recommended for dispensing low viscosity materials below 300 mPas whereas the VERMES MDS 3020+ will easily dispense medium viscosity materials up to 8000 mPas in repeatable single dots or beads of ≥5 nl. Example fluids include solvents, underfillers, lacquers, glues, hot melts, silicones, solder fluxes, oils and greases. These materials can be supplied to the valve via a choice of media such as 3ml to 55ml cartridges or pressure pot and hose interface.

For the dispensing of very high viscosity materials, please see the VERMES MDS 3200+.

Specific to production requirements, components of the valves including tappets, nozzles and heating options can be customised to optimise the dispensing process of your application.

Features & Benefits
Vermes MDS 3010+, Vermes MDS 3020+

**Precision Microdispensing Jetting Valve**

- Suitable for low (up to 300mPas) to medium (up to 8,000mPas) viscosity materials
- Reduced production times and increased throughput as a result of fast speeds: frequency >3,000Hz
- Multiple customisable configurations using interchangeable parts such as nozzle heating
- Dispense failure or stoppages are trackable with built in real time in the MDC 3090+ controller
- Easy cleaning process reduces downtime of equipment

**Applications**

Some examples of applications that could benefit from using a micro dispensing valve system include:

- **Life sciences, medical diagnostics and pharmaceutical**
- Water based cell and protein solutions
- **Electronics, semiconductors**
- UV adhesives, cyanoacrylates, conductive adhesives
- Flip chip advanced packaging
- **Watch manufacturing and precision mechanics**
- Synthetic oils, greases, adhesives
- Bearing and shaft journals
- **Renewable energy**
- Solder paste, edge/frame sealing, coatings, grease
- **Research & Universities**
- **Data tracking**
- RFID tags, antennas
- **Automotive**
The VERMES MDS 3010+ and MDS 3020+ micro dispensing valve systems include the valve and its corresponding controller the VERMES MDC 3090+.
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Precision Microdispensing Jetting Valve for Low to Medium Viscosity

MDC 3090+ Controller

- Flexible adjustable parameter settings
- Allows for fast valve opening and closing – increasing productivity
- Built in real time clock tracks failure and unintentional stoppages

MDC 3090+ Controller Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>128 mm H x 102 mm W x 173 mm D</td>
</tr>
<tr>
<td>Power connection</td>
<td>110/240 V AC, 50/60 Hz power socket (back side)</td>
</tr>
<tr>
<td>Memory for parameter sets</td>
<td>Internal: 10; External: unlimited</td>
</tr>
</tbody>
</table>
Vermes MDS 3010+, Vermes MDS 3020+

Precision Microdispensing Jetting Valve for Low to Medium Viscosity

<table>
<thead>
<tr>
<th>Valve operating modes</th>
<th>Burst Mode: predefined burst after trigger signal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Shot Mode: path length dependent triggering</td>
</tr>
<tr>
<td></td>
<td>Infinite Mode: number of shots controlled by external trigger</td>
</tr>
<tr>
<td></td>
<td>External Mode: application controlled definable drop volume setting</td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th></th>
<th>VERMES MDV 3010+</th>
<th>VERMES MDV 3020+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispensing viscosity</td>
<td>up to 300 mPas</td>
<td>up to 8,000 mPas</td>
</tr>
<tr>
<td>Dimensions</td>
<td>103 mm H x 39.5 mm W x 10 mm D</td>
<td></td>
</tr>
<tr>
<td>Minimum dispensing quantity</td>
<td>5 nl per pulse (depending on medium)</td>
<td></td>
</tr>
</tbody>
</table>
Vermes MDS 3010+, Vermes MDS 3020+

Precision Microdispensing Jetting Valve for Low to Medium Viscosity

<table>
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<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum droplet diameter</td>
<td>300 μm (depending on medium)</td>
</tr>
<tr>
<td>Supply pressure</td>
<td>0.1 – 8 bar (rel.) maximum: 30 bar</td>
</tr>
<tr>
<td>Maximum frequency</td>
<td>&gt;3,000Hz</td>
</tr>
<tr>
<td>Optional heating system</td>
<td>Regulated nozzle heating: 180 °C, higher upon request</td>
</tr>
</tbody>
</table>

Supplied by:

**INTERTRONICS**

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