



ASYMTEK Vortik

Progressive Cavity Pumps

Fully Integrated, Repeatable Volumetric Accuracy

Imagine a complete solution that ensures high volumetric dispense accuracy for one- and two-component applications. A solution that does not require a third-party control box or productivity-limiting refill cycles. Nordson Electronic Solutions delivers that solution with the Vortik® family of progressive cavity pumps (PCP). Vortik PCP pumps are fully integrated with our industry-leading dispensing systems and software to deliver repeatable volumetric accuracy without interruption. The solutions are ideal for demanding MEMs, PCBA, electromechanical, packaging, and automotive assembly applications such as bonding, sealing, encapsulation, and potting.

Vortik Sets the Standard



- A fully integrated system solution, complete with process controls — patent pending ASYMTEK Automated Ratio Calibration (ARC™) Technology for two-component applications and Mass Flow Calibration (MFC) that ensures consistently accurate mix ratios by volume or weight.
- True positive displacement of a fixed volume with each rotation regardless of ambient temperature conditions or fluid pressure variations.
- Two-component material dispensing in various mix ratios — increasing UPH up to 250% over one-component applications.
- Ceramic rotors are available for dispensing abrasive materials to ensure long-wear and consistent results
- Continuous needle dispensing of one- and two-component fluids with the capability to deliver a dispense accuracy of $\pm 1\%$ per revolution — for reduced cycle time and increased reliability and productivity.
- Supports a wide range of volume deposits from microelectronics to medium and large volume dispensing applications.
- Supports a wide range of viscosities from 1 – 500,000 cps.
- Optimized fluid break-off — with suckback through reverse rotation of the rotor.

All-in-One

Volumetric Dispensing Solutions

1 Dedicated ASYMTEK Fluidmove® software with patent pending ARC™ Technology for two-component applications.



2 A family of Vortik progressive cavity pumps (PCP) for one- and two-component volumetric dispensing.



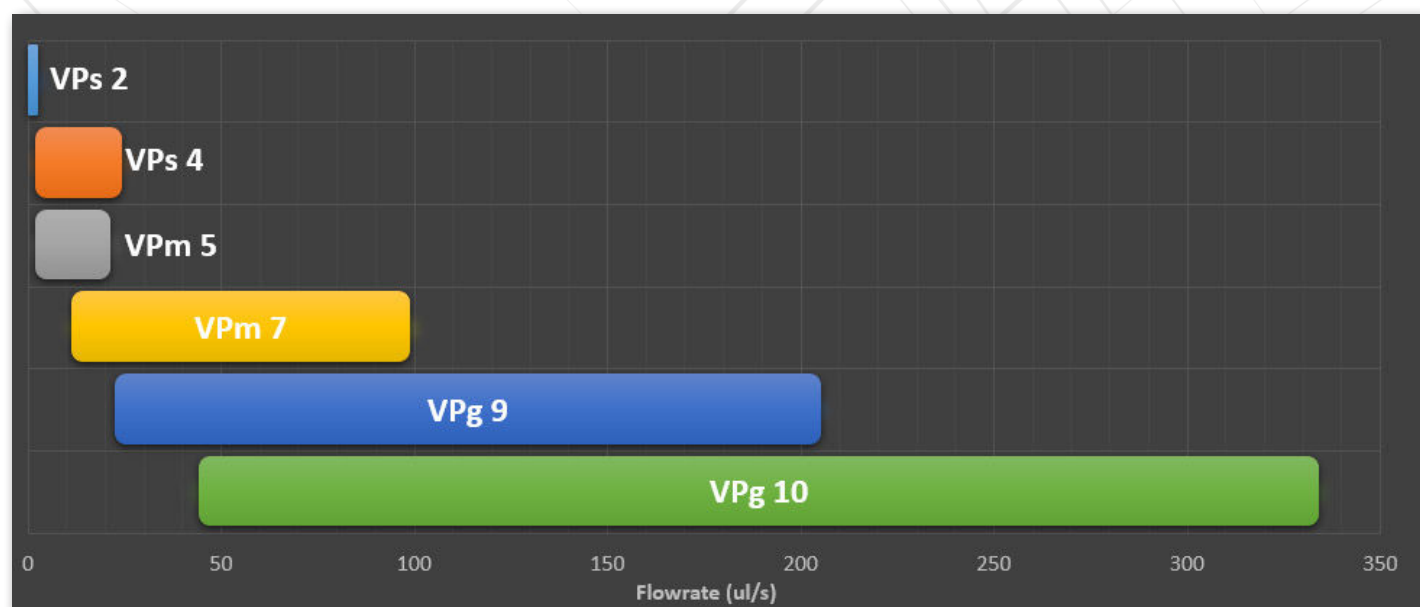
3 Everything is controlled through one system — eliminating the need for an external control box.



Flow Rates

Vortik progressive cavity pumps (PCP) come in three sizes for small volume (VPs), medium volume (VPm) and large volume (VPg) dispensing of one- and two-component materials. Each size features two models with differing rotor sizes that dispense a specific volume per revolution. At 0.28 microliters per second, the Vortik VPs offers the lowest flow rate and smallest depositions available in the market today.

The following table shows each of the one-component VPs, VPm and VPg sizes with corresponding flow rates in microliters per second.



Advanced Two-Component Calibration Assist with Award-Winning ARC Technology

At Nordson, we focus on next-level technologies and innovation to provide you with complete solutions. Two-component materials are becoming more desirable because they offer a lower cost of ownership and greater process flexibility. However, setting up an application to accurately dispense the correct ratio of part A and part B materials can be complicated. Controlling metering and mix ratios is critical to any two-component dispensing application. To fully address this challenge, we've added two advanced calibration assist features to streamline the two-component dispensing process – another Nordson first.

Setup in 5 Easy Steps

Take the guesswork out of application setup with the patent-pending ASYMTEK Automated Ratio Calibration Technology (ARC™ Technology) and Mass Flow Calibration (MFC). ARC Technology, a Global SMT & Packaging 2020 Global Technology Award winner, ensures consistently accurate mix ratios by volume or weight. With ARC Technology, you can quickly determine the optimal speed for the targeted mix ratio and dispense volume without manual calculations or time-consuming test iterations.

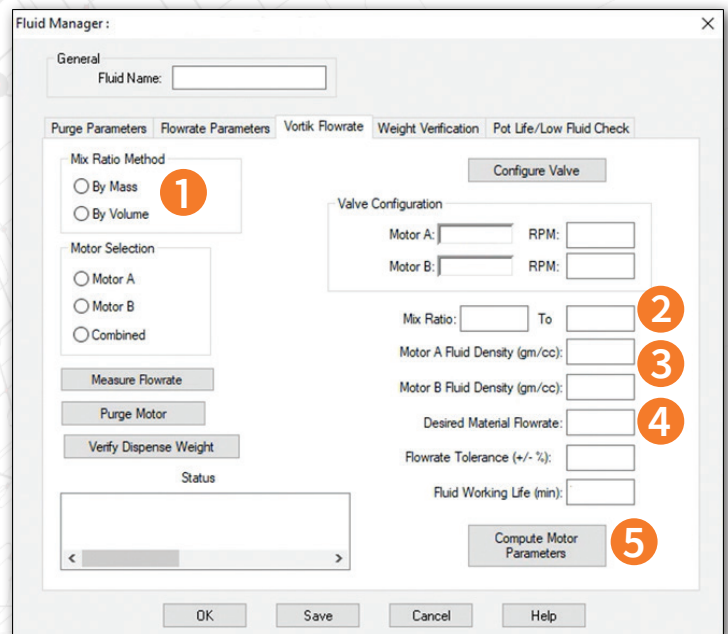
Enter basic information, including the mix ratio method (mass or volume), mix ratio, fluid density, and desired material flow rate, to complete your application setup in minutes.

Log files provide excellent traceability allowing you to monitor dispensing process data.

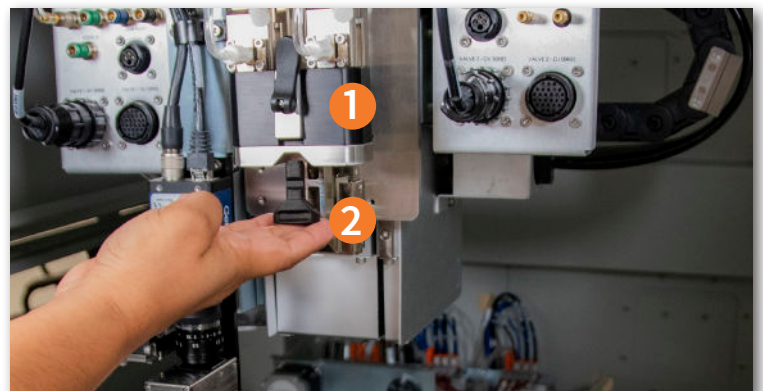
Convenient Fluid Management

All two-component Vortik pumps are equipped with a patent-pending ASYMTEK Quick Disconnect Manifold that prevents contact between part A and part B materials for easy transition between calibration, production, and overnight modes.

The plug blocks fluid flow when the application is not running.



ARC Technology in Fluidmove Software



1 — Quick Disconnect Manifold
2 — Plug

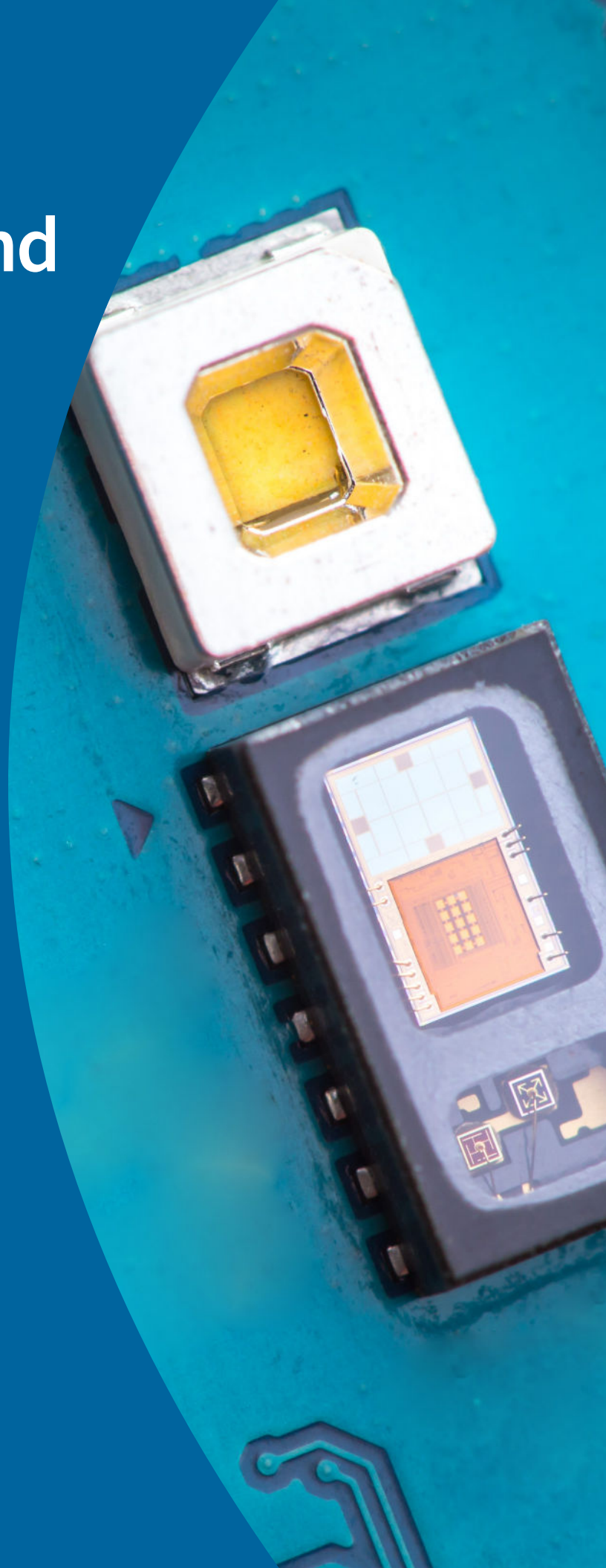
Mobile Device and MEMS

Vortik VPs Small-Volume Dispensing

Combine the Vortik VPs progressive cavity pump with the ASYMTEK Spectrum® II S2-900 fluid dispensing system to support mobile electronics and MEMS dispensing applications that require high-precision and small volumes.

Applications

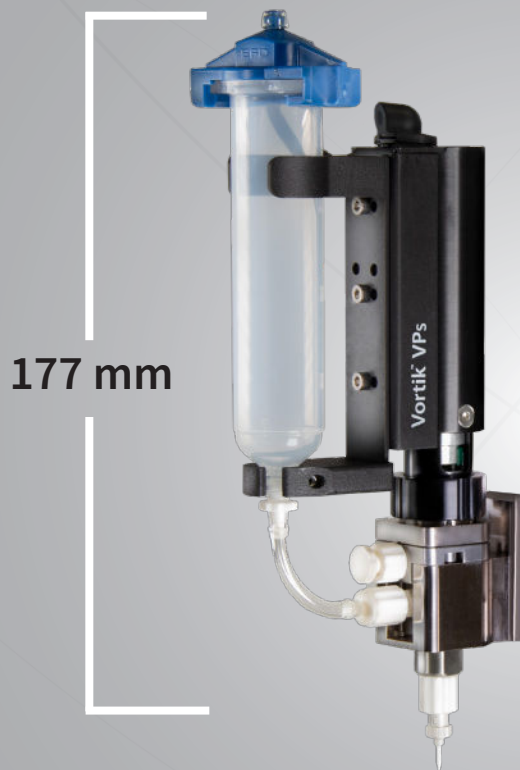
- Micro potting
- Conductive epoxy
- Solder paste with high volumetric accuracy
- Adhesives



The Vortik VPs progressive cavity pump delivers flow rates down to 0.28 microliters per second depending on the application. The Vortik VPs with the Spectrum II S2-900 fluid dispensing system, and Fluidmove software combine to deliver high throughput, world-class precision, automated setup, and closed-loop process control for consistent production quality.

VPs

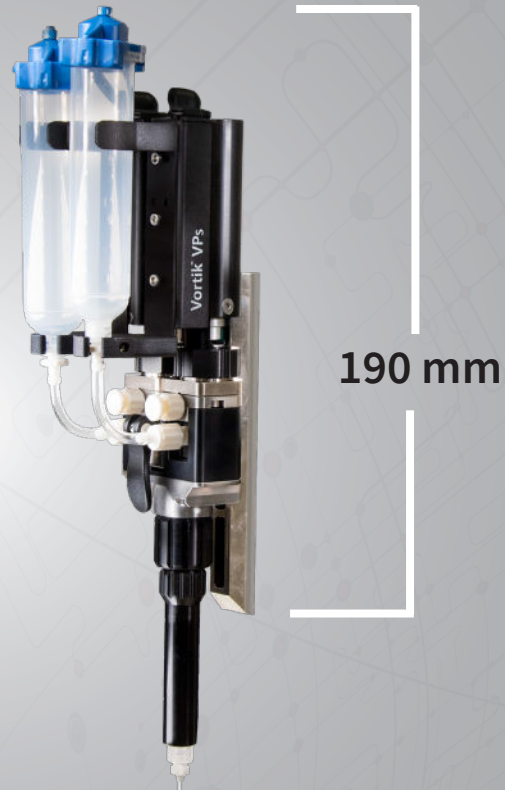
One Component



Flow rate

VPs 2: 0.28 – 1.86 $\mu\text{l/s}^{**}$
VPs 4: 2.66 – 24 $\mu\text{l/s}$

Two Component



Flow rate*

VPs 2-2: 0.59 – 3.7 $\mu\text{l/s}^{**}$
VPs 4-2: 4.0 – 5.6 $\mu\text{l/s}$
VPs 4-4: 5.3 – 48 $\mu\text{l/s}$



*The VPs 4-2 ratio is 2:1. All other ratios are 1:1.

** The lowest volume output is dependent on the application.

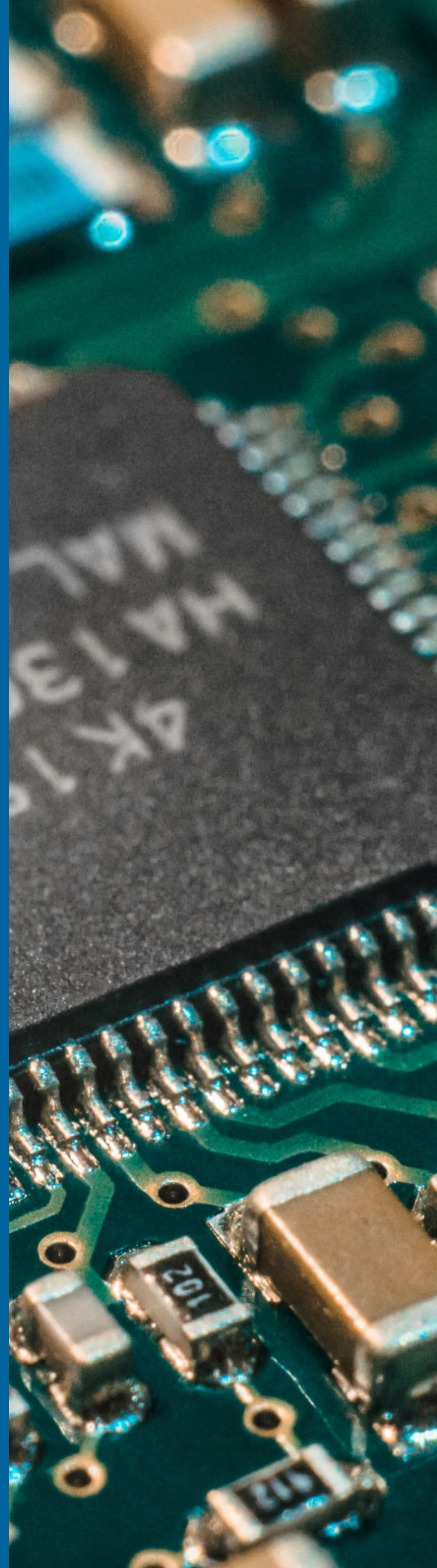
Package Assembly and Automotive

Vortik VPm Medium-Volume Dispensing

Combine the Vortik VPm progressive cavity pump with the ASYMTEK Quantum® fluid dispensing system to support package assembly and automotive applications. Nordson's fully integrated Vortik VPm and Quantum solution provides automated setup and closed-loop process control for high quality results whether you're updating an existing process or introducing automation for the first time.

Applications

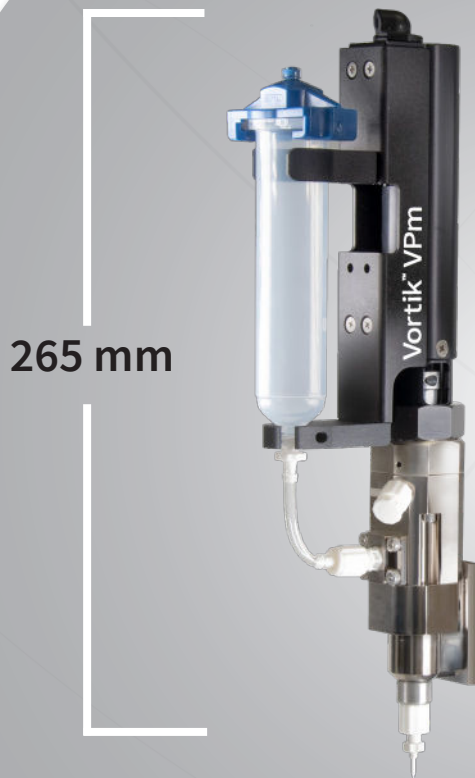
- Bonding
- Sealing
- Encapsulation
- Potting



The Quantum fluid dispensing system with the Vortik VPm progressive cavity pump is a cost effective solution for applications with mid-range fluid dispensing volumes.

VPm

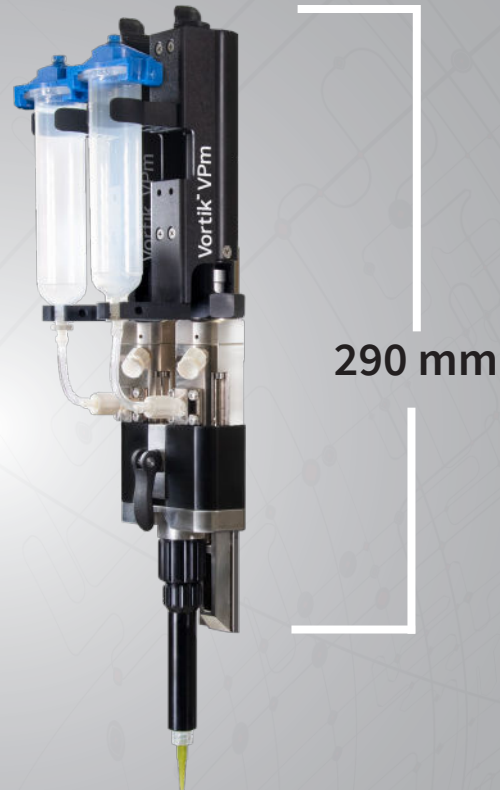
One Component



Flow rate

VPm 5: 2.88 – 21 $\mu\text{l/s}$
VPm 7: 13 – 98 $\mu\text{l/s}$

Two Component



Flow rate*

VPm 5-5: 5.8 – 42 $\mu\text{l/s}$
VPm 7-5: 20 – 64 $\mu\text{l/s}$
VPm 7-7: 27 – 197 $\mu\text{l/s}$



*The VPm 7-5 ratio is 2:1. All other ratios are 1:1.

Automotive

Vortik VPg Large-Volume Dispensing

The number of electronic components in cars has increased sharply in recent years. Vehicles now contain an array of sensitive electronic components that must perform reliably in adverse conditions — exposed to dirt, dust, moisture, and extreme temperatures.

To meet quality and safety standards, it's important to establish a repeatable and consistent dispensing process to protect parts and prevent damage.

Applications

- Bonding
- Sealing
- Thermal grease and gap filler
- Encapsulation
- Potting



The ASYMTEK Helios® SD-960 Series is designed for medium to large volume electronics assembly dispensing applications. Equipped with a fully integrated one- or two-component Vortik VPg progressive cavity pump, the SD-960 is ideal for a range of applications that require larger volume dispensing and high volumetric accuracy.

VPg

One Component Two Component

304 mm



Flow rate

VPg 9: 28 – 203 µl/s
 VPg 9 Ceramic: 31 – 204 µl/s
 VPg 10: 45 – 333 µl/s
 VPg 10 Ceramic: 49 – 294 µl/s

311 mm

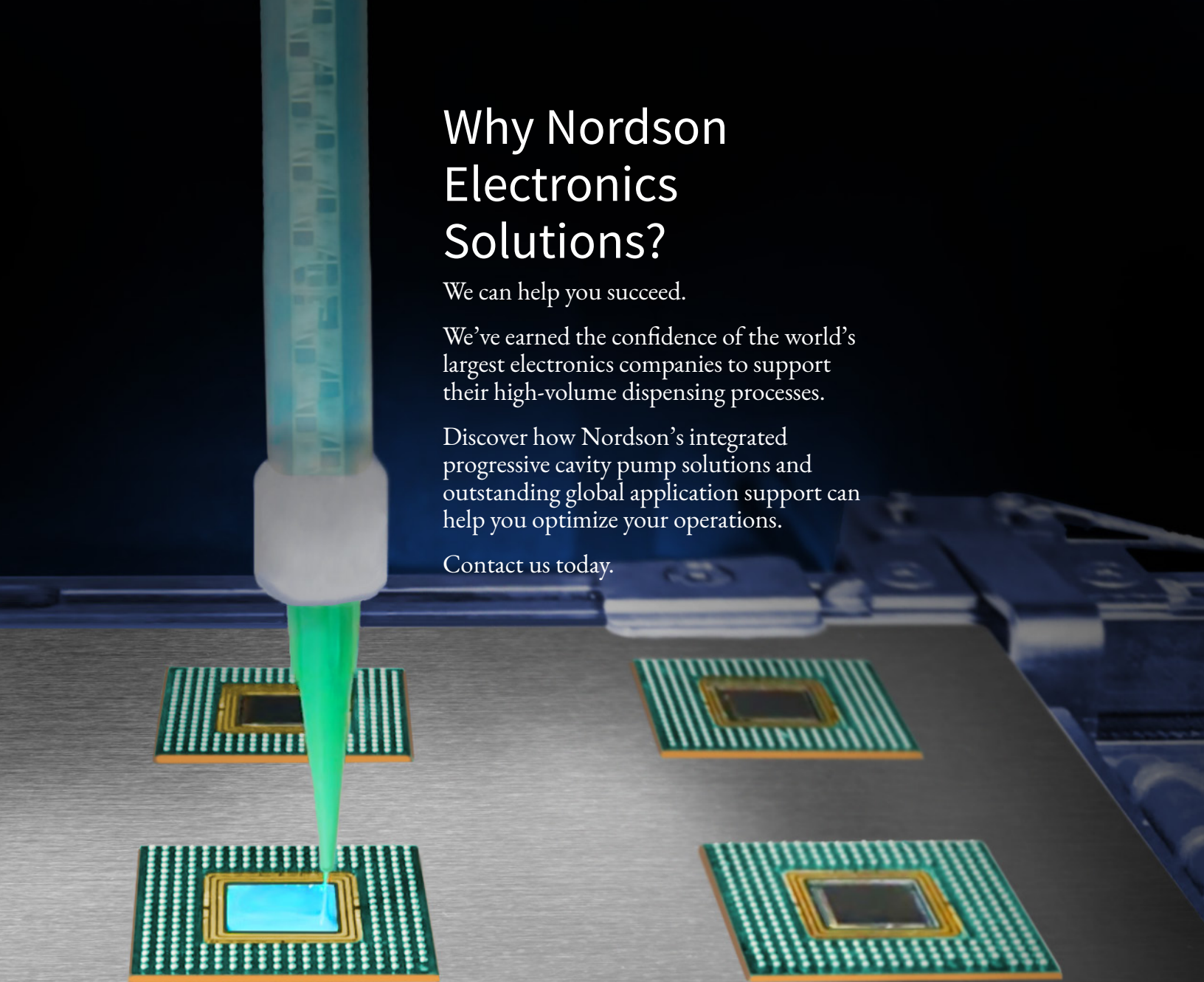


Flow rate*

VPg 9-9: 55 – 405 µl/s
 VPg 9-9 Ceramic: 61 – 408 µl/s
 VPg 10-9: 83 – 500 µl/s
 VPg 10-9 Ceramic: 92 – 441 µl/s
 VPg 10-10: 91 – 667 µl/s
 VPg 10-10 Ceramic: 98 – 588 µl/s



*Both versions of the VPg 10-9 are a 2:1 ratio. All other ratios are 1:1.



Why Nordson Electronics Solutions?

We can help you succeed.

We've earned the confidence of the world's largest electronics companies to support their high-volume dispensing processes.

Discover how Nordson's integrated progressive cavity pump solutions and outstanding global application support can help you optimize your operations.

Contact us today.

For more information, visit our website to find your local regional office or representative. We have several global locations to serve you.

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