

Specification Sheet

Forte Series

Advanced Dispensing

The ASYMTEK Forte® Series fuses leading technologies from our most advanced fluid dispensing system with proven features from our top selling dispensing platform to deliver exceptional productivity and accuracy.

Review the features and options, and contact us with your specifications. We look forward to helping you create a custom solution for your application.

The Forte Series provides:

- Improved cost-of-ownership, equivalent or better accuracy and 20-50% higher productivity over the top selling Spectrum® II platform
- Blazing speed for point-to-point moves – matching our most advanced fluid dispensing system at 1.5 G acceleration
- Higher throughput and accuracy with simultaneous dual-valve jetting and patented* real-time correction for x, y, and z-axis substrate skew
- Offline programming and simulation with Canvas® dispensing software
- Maximized production floor efficiency with a space saving footprint
- Reduced operator maintenance and intervention with standard integrated dual-valve service station, patented closed-loop process controls and nozzle cleaning rail

*Nordson US Patents 9,707,584; 10,150,131; 10,737,286 and other patents pending.



Application Highlights:



Flex Circuit
Assembly



PCBA



Underfill



Encapsulation

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May 2022

**Nordson**
ELECTRONICS SOLUTIONS

System Features

● Standard ○ Option

| Part Conveyance | |
|--|---|
| Single lane , standalone/ in-line conveyor | ● |
| Stations per lane: 1 (pre- and post-queue stations are optional) | ● |
| On-rail edge clamps | ● |
| Dual lane conveyor | ○ |
| Conveyor | |
| Multimove conveyor with recipe-based auto-width adjustment capability | ● |
| 3-mm O-ring (ESD) | ● |
| 6-mm flat belt (ESD) | ○ |
| 4-mm flat belt (ESD) | ○ |
| Computer and Software | |
| PC with Windows® operating system | ● |
| Canvas® dispensing software | ● |
| Vision & Lighting | |
| Auto pattern recognition /digital camera | ● |
| Part illumination: RGB, on-axis | ● |
| Part illumination: on- and off-axis combo white LED | ○ |
| Fiducial-find: stop-and-capture | ● |
| Fiducial-find: Fids-on-the-Fly™ | ● |
| Dispense Tip Position & Maintenance | |
| Dual valve service station: dispense tile, tactile Z sensor, purge station | ● |
| Laser height sensor | ● |
| Mass Flow Calibration (MFC) for needle dispensing (with weigh scale) | ● |
| Calibrated Process Jetting (CPJ) for jet dispensing (with weigh scale) | ● |
| Jet nozzle cleaning rail/station | ● |

| Heater Options and Control | |
|---|---|
| Programmable jet nozzle heater control | ● |
| Auger valve needle heater | ○ |
| Heaters: One- to three-station substrate heaters, contact or impingement (up to 6 with dual lane) | ○ |
| Sensors and Alarms | |
| Low pressure sensor (main air pressure) | ● |
| Light beacon (tower) | ● |
| Low fluid sensor | ○ |
| Additional Features/Options | |
| Programmable fluid & valve pressure | ● |
| Precision scale (replaces standard scale) | ○ |
| Pre- and/or post-queue stations | ○ |
| SECS/GEM interface | ○ |
| Dual Valve Jetting/ Dispensing | ○ |
| Valve Compatibility | |
| Intellijet®, DispenseJet® DJ-9500, and DV-7000/8000C auger valves | ● |

Trademarks

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Motion System

| | |
|------------------------|--------------------------|
| X-Y acceleration | 1.5 g peak |
| X-Y velocity | 1.0 m/s (39.4 in/s) max. |
| Minimum Z dispense gap | 50 µm (0.002 in.) |

Wet Dispense⁽¹⁾ X-Y Placement Accuracy and Repeatability⁽²⁾

| | Accuracy Mode 36,000 DPH ⁽³⁾ | Throughput Mode 54,000 DPH ⁽³⁾ |
|-------------------|---|---|
| Single Applicator | Cp ≥ 1.0 ± 35 µm (0.0014 in.) | ± 50 µm (0.0020 in.) |
| | Cp ≥ 1.33 ± 47 µm (0.0019 in.) | ± 67 µm (0.0026 in.) |
| | Cp ≥ 1.67 ± 59 µm (0.0023 in.) | ± 83 µm (0.0033 in.) |
| Dual Applicator | Cpk ≥ 1.0 ± 40 µm (0.0016 in.) | ± 60 µm (0.0024 in.) |
| | Cpk ≥ 1.33 ± 60 µm (0.0024 in.) | ± 80 µm (0.0031 in.) |
| | Cpk ≥ 1.67 ± 75 µm (0.0030 in.) | ± 100 µm (0.0039 in.) |
| Dual Applicator | Cp ≥ 1.0 ± 65 µm (0.0026 in.)* | ± 90 µm (0.0035 in.)* |
| | Cpk ≥ 1.0 ± 75 µm (0.0030 in.)* | ± 100 µm (0.0039 in.)* |

¹ Wet dispense repeatability is verified using Nordson ASYMTEK method on a 722-dot grid.

² The precision to which a dot can be placed with local fids. Wet dispense accuracy is verified using Nordson ASYMTEK method on a 722-dot grid.

³ DPH: Dots Per Hour.

*Preliminary specification.

Dispense Area

| Single Lane System | |
|--------------------|--|
| X-Y Single Valve | Maximum Dispense Area ⁽¹⁾ 342 x 407 mm (13.5 x 16.0 in.) |
| X-Y Dual Valve | 233 x 396 mm (9.2 x 15.6 in.) @ 55 mm pitch between valves — the height sensor, camera, and both valves provide full coverage |
| | 386 x 396 mm (15.2 x 15.6 in.) @ 55 mm pitch between valves — provides added flexibility with limitations: not all areas can be viewed by the camera or reached by individual valves. For more information, see the User Manual. |

¹ The dispense area dimensions are given in X-Y format: X is the direction of conveyor motion; Y is measured from the front conveyor rail to the back of the system. Indicated area includes mounted camera and laser height sensor.

Conveyor

| | |
|------------------|---|
| Transport height | Conforms to SMEMA standard for conveyor height; Minimum adjustable from 913-965 mm (35.9 to 37.9 inches) from the floor to the pass line (bottom of the transported part); contact factory for heights < 913 mm |
| Flow direction | Standard left-to-right flow with fixed front rail Right-to-left upon request |
| Operation modes | Automatic (SMEMA), manual and pass-through |

Single Lane Conveyor Specification

| | 3-mm O-ring | 6-mm Flat Belt | 4-mm Flat Belt |
|--|--|---|---|
| Typical Applications | Thin, low weight substrates such as lead-frames with no heat or low heat | Heavy Auer boats (or similar) with heat | Thin substrates such as lead-frames with heat |
| Maximum Capacity ⁽¹⁾ | 1 kg (2.2 lb.) | 2 kg (4.4 lb.) | 1 kg (2.2 lb.) |
| Belt Temperature | Continuous: 50 °C (122 °F) Max: 80 °C (176 °F) | Continuous: 100 °C (212 °F) Max: 140 °C (284 °F) | Continuous: 100 °C (212 °F) Max: 140 °C (284 °F) |
| Rail Lengths | 1 station: 600 mm (23.6 in.) 2 stations: 847 mm (33.3 in.) 3 stations: 1095 mm (43.1 in.) | | |
| Conveyor Edge Clearance ⁽²⁾ | 5 to 6 mm (0.2-0.24 in.) | | |
| Conveyor Overboard Clearance | 30 mm (1.2 in.) standard | | |
| Conveyor Under-board Clearance | 4.5 mm @ 4 to 5.75 mm from edge; 55 mm beyond 5.75 mm from edge | | |
| Board/Carrier Size with Lift Table (LxW) | Max. 1 station: 340 x 535 mm (13.4 x 21.0 in.) Max. 3 stations: 320 x 535 mm (12.6 x 21.0 in.) Minimum: 25 x 34 mm (1.0 x 1.3 in.) | | |
| Carrier Thickness | Max: 12.5 mm (0.5 in.) | | |

¹ Total weight of all parts on conveyor at any one time.

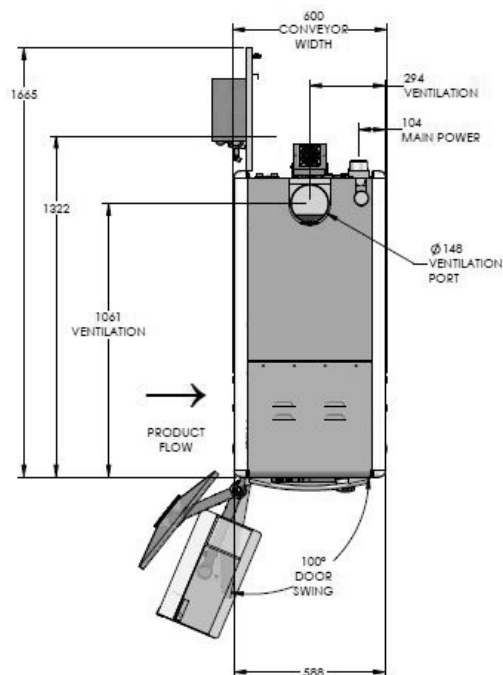
² 5 mm edge clearance is standard, 6 mm includes rail clamp thickness.

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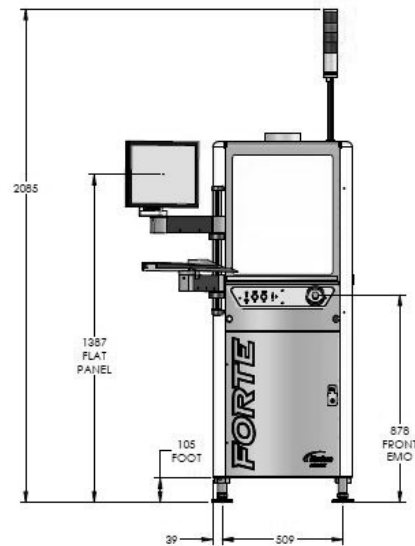
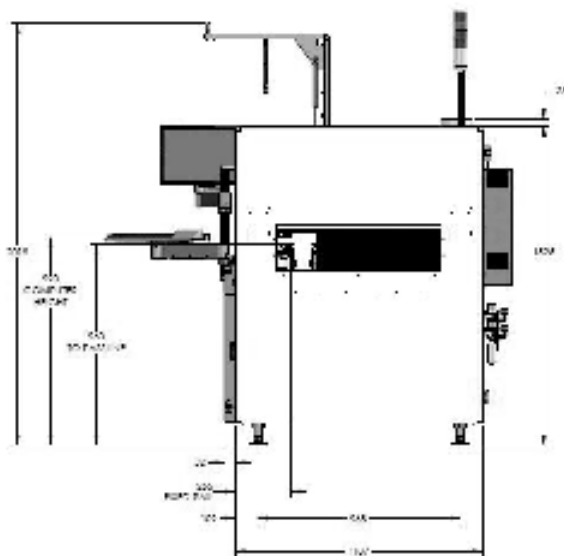
Facilities Requirements

| | |
|---------------------------------|--|
| System Footprint | 600 (conveyor rail end-to-end) x 1374 mm (23.6 [conveyor rail end-to-end] x 54.1 in.) all doors closed. |
| Power (Mains) | 200-240 VAC, 3 wire, single phase, 30A, 50/60 Hz, <10% THD, connected through 2.5 meter cord with male locking plug, NEMA L6-30P [Europe only male plug: IEC 60309, 2.4 meter]. |
| SCCR | 1 KVA (CB Type K for facility) |
| Facility Circuit Requirement | 30A |
| Air Supply | Two air supplies: one with 1 CFM @ 100 psi for the system ("MAIN1"), a second one with 3 CFM @ 100 psi for contact tooling and service station ("MAIN2"). To run the machine both Main 1 and Main 2 shall be connected. If no contact tooling is required, Main 2 can be with 1 CFM @ 100 psi. (100 psi = 689 kPa, 6.8 atm). |
| Platform Rear Pneumatic Fitting | ¼ male NPT x ¼ male quick disconnect, ¼" Industrial Interchange nipple, ref MIL-C4109 |
| System Noise | <75 dBA @ 1m* |
| Environmental | Shipping: 0-55 °C, 5-90% RH Operating: 5-40 °C, 5-90% RH |
| Ventilation | Vent port diameter: 147.6 mm (5.8 in.) duct; up to 100 SCFM @ 1.0 in. water column (0.047 m³/s @ 25 mm) from the exhaust port may be required for heated applications. |
| Weight | 377 to 422 kg (831 to 930 lbs.) depending on base system configuration |
| Standards Compliance | SEMI-S2; SEMI-S8; SEMI-F47; SEMI-E78; IEC 61340-5-1; CE; SMEMA |

*Preliminary specification.



System Dimensions



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