

PROCESS PLATFORM: MILLENNIUM® M-2020 SERIES

ULTRA HIGH-SPEED, HIGH-ACCURACY DISPENSING SYSTEM FOR SEMICONDUCTOR ENCAPSULATION

The Millennium® M-2020 dispensing system delivers unparalleled high speed and accuracy for today's most demanding microelectronics applications for in-line semiconductor package and board assembly. The M-2020 system is ideal for high-volume, production-critical applications that must be sustained 24 hours per day, 7 days per week with minimal operator intervention.

Powerful software-controlled dispensing ensures precise, consistent application of a wide range of encapsulants, adhesives, and thermal compounds, with quick and accurate programming control. The platform's DP-3000 servo-controlled linear pump delivers the high-accuracy, closed-loop repeatability required for operations such as underfill of flip chips, chip scale packages, and chip-on-board assembly. The pump is a true positive displacement linear pump that is not affected by fluid viscosity, supply pressure, needle size, or fluid/pump temperature. Dam and fill operations are easily accomplished with the optional dual-action dispensing head. Contact or impingement heating ensures a reliable thermal environment.

The high-performance M-2020 system incorporates field-proven, patented Mass Flow Calibration to deliver a precise fluid supply with software-managed temperature control. Asymtek's exclusive Fluidmove® for Windows NT® (FmNT) software can handle the most challenging dispensing applications. With its precision dispensing valves or pumps, and advanced lighting options, the M-2020 system will meet your most demanding requirements.



FEATURES

- Supports full range of advanced IC encapsulation applications with field-proven closed-loop fluid and thermal management
- Patented Mass Flow Calibration ensures accurate, repeatable dispensing volumes
- Fast-motion acceleration (2 g peak), with up to 1 m/s X-Y velocity for high throughput with ± 0.025 mm repeatability
- Compact footprint (1.65 m²) conserves factory floor space
- Improved throughput using pipelined fiducials
- Network interface card included, allowing connection to a local Ethernet network
- SEMI-S2 compliant, ergonomic flat-panel display and integrated keyboard

M-2020 SYSTEM SPECIFICATIONS:

MOTION SYSTEM:

Type:	Low-inertia, closed-loop, high-resolution linear encoder, brushless DC servo motor XYZ positioner
Encoder Resolution:	5 micrometer
X-Y Acceleration:	2.0 g peak with S-curve jerk control
X-Y-Z Velocity:	1 m/s (40 in./s)
X-Y-Z Positioning Accuracy:	±0.07 mm (0.003 in.), 3 sigma
X-Y Repeatability:	±0.025 mm (0.001 in.)
Z Travel:	78 mm (3.1 in.)

DISPENSE AREA:

DP-3000 Linear Pump	435 x 535 mm (17.1 x 21.1 in.)
Dual Action DV-6000 and DP-3000	319 x 535 mm (12.6 x 21.1 in.)

VISION AND LIGHTING:

Vision:	Cognex® or ITI, automatic pattern recognition system allows for optical registration of the work piece to reliably locate dispensing sites in both surface mount adhesive and solder paste dispense operations (can compensate for up to 7° rotational misalignment of part)
Lighting:	On-axis LED through lens (standard); Moritex (optional)

CONVEYOR:

O-ring style conveyor with pre-dispense, dispense-heat and post-dispense stations
 SMEMA-compatible conveyor
 Conveyor can be configured to use Multimove
 Conveyor software

COMPUTER:

Computer:	Pentium®-based PC
User Interface:	Color TFT flat-panel display ASCII keyboard with integrated storage drawer Integrated system trackball
Networking Option:	Network interface card (Twisted pair Ethernet support)

SOFTWARE:

User Environment:	Fluidmove® for Windows NT®
Operating System:	Windows NT
Software Options:	SECS/GEM Interface

FLUID DELIVERY METHOD:

DP-3000 Linear Pump	
DV-6000 Auger Pump	

FACILITIES REQUIREMENTS:

System Footprint:	See illustration
Air Supply:	621 kPa (6.1 atm., 90 psi) 1 CFM standard, up to 5 CFM for some configurations (28 liters/min = 1 CFM) Note: This is an adaptive power supply; it can accommodate supply voltages between 185 - 265 VAC. Typical U.S. is 230 VAC, single phase, 30A. Also automatically accommodates 50-60 Hz
Power (Mains):	
System Weight:	522 kg (1,150 lbs.)
Standards Compliance:	SEMI-S2 SEMI-S8 SMEMA CE

OTHER STANDARD FEATURES:

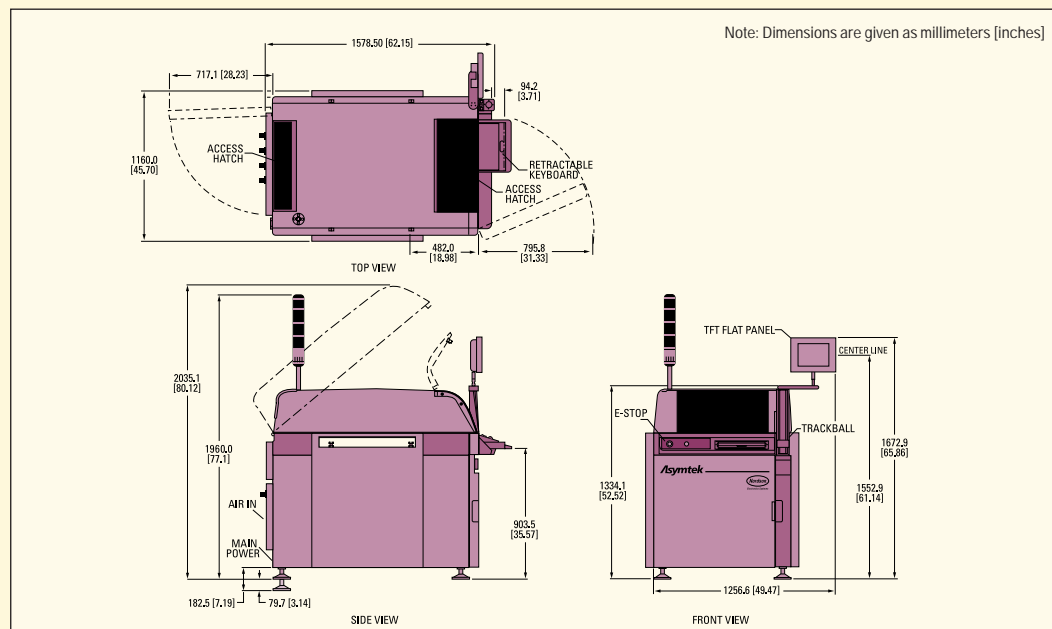
Mass Flow Calibration
 Needle heater
 Needle sensor
 Vacuum purge station

OPTIONAL FEATURES:

Mechanical height sensor or non-contact laser height sensor
 Dual-action dispensing head for dam and fill
 Contact or impingement three-station substrate heating
 Process development hot plate
 Free-standing loaders
 Quick-release brackets for pumps and valves

*Other options are available.
 Contact us for further information.*

Please contact these locations for the name of your local representative.



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