



# Molded for Success

**WITH BOSTIK ADHESIVES AND LPMS EQUIPMENT**





## INTRODUCING AN LPM PARTNERSHIP

Since its start in the 1970s, low pressure molding (LPM) has greatly expanded, protecting and sealing electronic components across more markets and for increasingly complex applications. Therefore, as LPM application needs continue to evolve, it's important to protect those parts using the right LPM bonding solution and equipment. To help make it easy, Bostik and LPMS USA (LPMS) have partnered together, offering you LPM adhesives and injection molding equipment that enable you to:

- Encapsulate parts safely in seconds and increase production throughput
- Simplify the protection process by reducing the number of manufacturing steps
- Enhance processing flexibility to easily protect even your most sensitive electronics for the most demanding applications

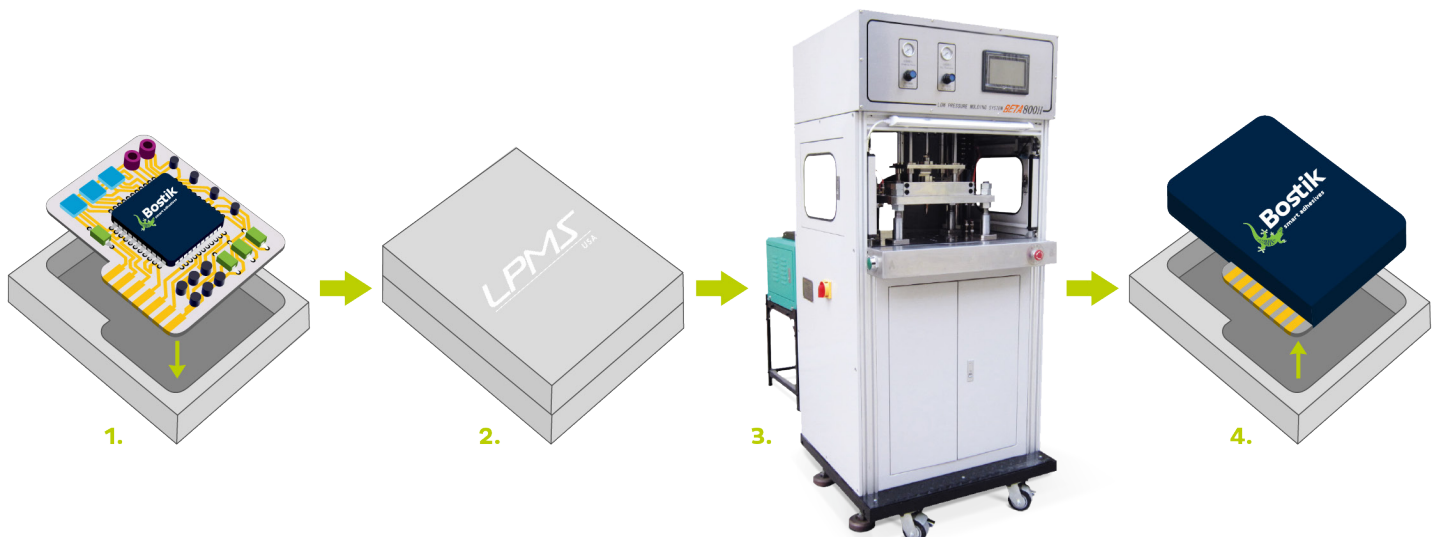
### WHO IS BOSTIK?

Bostik is a global adhesive and sealant leader specializing in innovative LPM bonding solutions to improve processes and overall products.

### WHO IS LPMS?

LPMS is a leading provider of LPM equipment, tooling services, materials and contract manufacturing.

### BOSTIK + LPMS = LPM MADE EASY



# HOW BOSTIK AND LPMS HELP YOU

By choosing to work with Bostik and LPMS for your LPM application needs, you will:

## EXPAND YOUR LPM CAPABILITIES

Bostik and LPMS' products can be customized to fit your exact LPM requirements. You will have access to an extensive range of adhesives uniquely formulated to offer varying temperature and oil resistance, many unmatched in the industry.

Additionally, you will have the ability to choose from the widest variety of overmolding equipment on the market with each machine customizable to your exact specifications.

## INCREASE YOUR ACCESS TO LPM EXPERTS

Bostik and LPMS' team of dedicated LPM experts have in-depth knowledge in both molding adhesive materials and equipment needed to encapsulate your electronic components. They will work with you directly to ensure the right adhesive and machine are chosen for your application needs.

## IMPROVE YOUR END-USE PRODUCTS

As leaders well-versed in LPM needs, Bostik and LPMS help you improve your products in the following ways:

- **Increased protection** for sensitive, fragile electronics due to Bostik's adhesives' easy processability at low pressure and low temperatures
- **Enhanced quality** due to LPMS' comprehensive equipment product line and tooling design to ensure your end-use products offer the ideal moldability and repeatably to give you the exact product you need every time.

# EXPERIENCED GLOBAL SOLUTION PARTNER

By using Bostik and LPMS' solutions, you can address LPM needs across markets, including:



**Automotive**

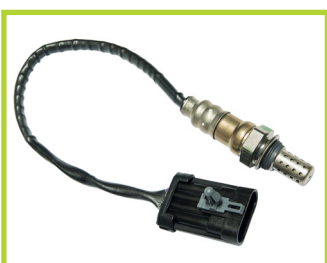


**Agriculture**

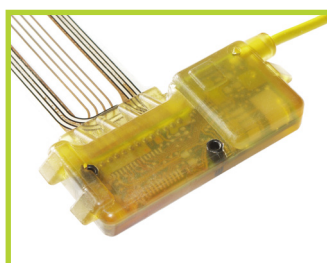


**LED Lighting**

# KEY LPM APPLICATIONS



**Captors and Sensors**



**PCB Overmolding**



**Connectors and Cables**



**Antennas**

# BENEFITS OF LOW PRESSURE MOLDING

## Equipment

### SMALL PROCESS FOOTPRINT

Lower energy consumption due to low injection pressure and need for less equipment.

### HIGH PRODUCTION SPEEDS

Reduced cycled times with one-component product; immediate set with no mixing errors.

### EASIER MANUFACTURING

Simplified process with only three steps.



## Product

### HARMLESS ENCAPSULATION

Suitable for the most sensitive electronic components.

### HIGH RESISTANCE

Water-tight, UL94 VO approved, resistant to high temperatures, shocks, harsh environments and solvents.

### QUALITY DESIGN

Lightweight, sky-lining and aesthetically-pleasing design; no housing needed.



## Sustainability

### ZERO WASTE

Recyclable excess material and long shelf life

### NATURAL MATERIAL

Solvent-free, bio-based up to 80%.

### RECYCLABILITY

Improved end-of-life management.

## LPM ADHESIVES

Bostik's multipurpose, sustainable and safe LPM adhesives are moldable polyamides that offer easy processability and high resistance in harsh environments. Also primarily available in black and neutral colors, these products enable you to meet even the most complex application needs.

Product	Operating Range (°C)	Shore Hardness (ISO 868)	Softening Point (°C) ASTM D3461	UL94 Flammability Ratings	Typical Characteristics
<b>Thermelt 861</b>	-40°C to 125°C	38D	160°C±5°C	V-0	General purpose with good adhesion for industrial applications
<b>Thermelt 867</b>	-40°C to 150°C	45D	183°C±5°C	V-0	General purpose and high performance with good adhesion and environmental and thermal shock resistance for automotive exterior applications
<b>Thermelt 868</b>	-40°C to 125°C	39D	160°C±5°C	V-0*	Very good UV and moisture resistance for demanding outdoor and lighting applications
<b>Thermelt 858</b>	-40°C to 150°C	49D	180°C±5°C	V-0*	Very good thermal stability, UV and moisture resistance for outdoor industrial applications - available in black only
<b>Thermelt 865</b>	-55°C to 120°C	31D	157°C±5°C	V-0	Very good low temperature resistance and adhesion for automotive applications
<b>Thermelt 195</b>	-20°C to 150°C	56D	200°C±5°C	V-2	Excellent high temperature thermal stability and chemical resistance for automotive and industrial applications
<b>Thermelt 861 HV</b>	-40°C to 125°C	22D	160°C±5°C	V-0	General purpose with good adhesion and increased cracking resistance for industrial applications - available in black only
<b>Thermelt 867 HV</b>	-40°C to 150°C	32D	182°C±5°C	V-0	General purpose with very good adhesion, mechanical properties and increased resistance to cracking for automotive and industrial applications

**Please note:** All product information in the above chart is accurate as of February 2021.

\*Formulated with additive packaged to improve UV resistance but does not hold UL certification.

# LPMS EQUIPMENT

LPMS' wide array of horizontal-injection, vertical-injection, semi-automated and handheld equipment ensures that whatever your LPM need, there is LPM equipment ideal for it.

## HORIZONTAL-INJECTION EQUIPMENT

LPMS' horizontal-injection machines are designed with a large molding area to accommodate larger parts, an attached melt tank to process higher-viscosity materials or an external melt tank to swap out materials easily. The standard clamping force for these machines is 1.2 to 5 Tons.



Specifications	BETA 300	BETA 600	KAPPA 1000H	KAPPA 1100H	KAPPA 2000H
<b>Machine Size</b>	700 × 950 × 1020 mm 27.36 × 37.40 × 40.16 in 595 lbs	850 × 830 × 1651 mm 33.46 × 32.68 × 65.0 in 705 lbs	970 × 970 × 2050 mm 38.18 × 38.18 × 80.70 in 882 lbs	975 × 1150 × 1880 mm 38.39 × 45.28 × 74.02 in 882 lbs	1300 × 950 × 1900 mm 51.18 × 37.40 × 74.80 in 1345 lbs
<b>Electricity</b>	200–240 VAC 1 Phase · 60 Hz	200–240 VAC 1 Phase · 50 or 60 Hz	200–240 VAC 1 Phase · 50 or 60 Hz	200–240 VAC 1 Phase · 50 Hz	200–240 VAC 1 Phase · 50 or 60 Hz
<b>Air Pressure</b>	0.5–6.0 MPa · 73–87 psi	0.5–6.0 MPa · 73 psi	0.5–6.0 MPa · 73 psi	0.5 MPa · 73 psi	0.5–6.0 MPa · 73 psi
<b>Air Volume</b>	3.5 ft <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min
<b>Autofeed</b>	Optional	–	–	Optional	–
<b>Clamping Method</b>	Pneumatic	Pneumatic	Pneumatic over hydraulic	Air Over Oil cylinder	Pneumatic over hydraulic
<b>Clamping Force</b>	1.2 Tons	1.2 Tons	5 Tons	5 Tons (10-Ton option)	5 Tons
<b>Clamping Stroke</b>	125 mm (optional 150 mm · 4.92 in (optional 5.90 in)	150 mm · 5.90 in	150 mm · 5.90 in	Max. 4.92 in (optional 5.91 in)	150 mm · 5.90 in
<b>Max. Mold Size</b>	250 × 120 × 150 mm 9.84 × 4.72 × 5.90 in	250 × 120 × 150 mm 9.84 × 4.72 × 5.91 in	229 × 120 × 150 mm 9.00 × 4.72 × 5.91 in	300 × 200 × 150 mm 11.81 × 7.87 × 5.90 in	300 × 200 × 150 mm 11.81 × 7.87 × 5.90 in
<b>Nozzle</b>	LPMS-G02	LPMS-G02	LPMS-G10	LPMS-G02	LPMS-G10
<b>Standard Safety</b>	Light curtain E-stop button Safety doors	Two-hand actuation E-stop button Light curtain Safety doors	Two-hand actuation E-stop button Light curtain Side safety doors	Light Curtain	Two-hand actuation E-stop button Light curtains Side safety boards
<b>Melt Tank Quantity / Volume</b>	One built-in · 3L	One built-in · 3L	One external · 7L	–	Two external · 7L
<b>Temperature Control Zones</b>	2	2	3	2	5

## VERTICAL-INJECTION EQUIPMENT

LPMS also offers multiple vertical-injection machines that provide better wet out, improved adhesion, faster cycle times and lower material waste due to the shorter runner. Vertical-injection machines include an attached or external melt tank with a standard clamping force of 1.2 to 5 Tons.

Your part size and throughput determines which machine best suits your application. LPMS' team of technical engineers will help guide you in the right direction to ensure optimal results.



Specifications	BETA 800	BETA 800H	BETA 800HMG
<b>Machine Size</b>	1010 × 935 × 1660 mm 39.76 × 36.81 × 65.35 in · 771 lbs	940 × 840 × 1865 mm 37.00 × 33.07 × 73.42 in · 926 lbs	1245 × 945 × 1982 mm 49.01 × 37.20 × 78.03 in · 1454 lbs
<b>Electricity</b>	200–240 VAC · 1 Phase · 50 or 60 Hz	200–240 VAC · 1 Phase · 50 or 60 Hz	200–240 VAC · 1 Phase · 50 or 60 Hz
<b>Air Pressure</b>	0.5–6.0 MPa · 73 psi	0.5–6.0 MPa · 73 psi	0.5–6.0 MPa · 73 psi
<b>Air Volume</b>	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min
<b>Clamping Method</b>	Pneumatic	–	Pneumatic over hydraulic
<b>Clamping Force</b>	1.2 Tons	5 Tons	5 Tons
<b>Clamping Stroke</b>	150 mm · 5.90 in	150 mm · 5.90 in	150 mm · 5.90 in
<b>Max. Mold Size</b>	300 × 200 × 150 mm 11.81 × 7.87 × 5.90 in	300 × 200 × 150 mm 11.81 × 7.87 × 5.90 in	300 × 200 × 150 mm 11.81 × 7.87 × 5.90 in
<b>Nozzle</b>	LPMS-G08	LPMS-G08	LPMS-G02
<b>Standard Safety</b>	Two-hand actuation · E-stop button Light curtain · Side safety doors	Light curtain	Two-hand actuation · E-stop button Light curtain · Side safety doors
<b>Melt Tank Quantity / Volume</b>	One built-in · 5L	One external · 7L	Two external · 7L
<b>Temperature Control Zones</b>	3	3	6

## SEMI-AUTOMATIC & HANDHELD EQUIPMENT

For high-volume production, LPMS offers a variety of semi-automated machines from a tabletop shuttle to a rotary machine. Conversely, we also offer handheld equipment for low-volume production and prototype testing. These machines are ideal for high-mix, high-variability production.



Specifications	BETA 370	KAPPA 700	LPMS 900MD
<b>Machine Size</b>	990 × 874 × 965 mm 38.98 × 34.41 × 37.99 in · 881 lbs	1180 × 780 × 1460 mm 46.45 × 30.70 × 57.48 in · 881 lbs	1135 × 1443 × 1803 mm 44.68 × 56.77 × 70.98 in · 992 lbs
<b>Electricity</b>	200–240 VAC · 1 Phase · 50 Hz	200–240 VAC · 1 Phase · 50 or 60 Hz	200–240 VAC · 1 Phase · 50 or 60 Hz
<b>Air Pressure</b>	0.5 MPa · 73 psi	0.5–6.0 MPa · 7.3–87.0 psi	0.5–6.0 MPa · 73 psi
<b>Air Volume</b>	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min
<b>Clamping Method</b>	Air cylinder	Air cylinder	Pneumatic
<b>Clamping Force</b>	1.25 Tons	2 Tons	1.2 Tons
<b>Clamping Stroke</b>	75 mm	150 mm · 5.90 in	75 mm · 2.95 in
<b>Max. Mold Size</b>	250 × 120 × 150 mm 9.84 × 4.72 × 5.91 in	305 × 153 × 153 mm 12.00 × 6.02 × 6.02 in	300 × 200 × 308 mm 11.81 × 7.87 × 12.13 in
<b>Nozzle</b>	LPMS-G08	LPMS-G10	–



Specifications	ALPHA 100	ALPHA 120J
<b>Machine Size</b>	540 × 400 × 510 mm · 21.25 × 15.74 × 20.07 in · 35.0 lbs	610 × 320 × 405 mm · 23.95 × 12.60 × 15.90 in · 95 lbs
<b>Electricity</b>	110–120 VAC · 1 Phase · 50 or 60 Hz	200–240 VAC · 1 Phase · 50 Hz
<b>Air Pressure</b>	0.0–0.7 MPa · 14–100 psi	0.5–6.0 MPa · 7.3–87.0 psi
<b>Air Volume</b>	0.7 ft <sup>3</sup> /min · 0.02 m <sup>3</sup> /min	3.5 ft <sup>3</sup> /min · 0.1 m <sup>3</sup> /min
<b>Max. Mold Size</b>	120 × 100 × 82 mm · 4.72 × 3.93 × 3.22 in	Depends on part design
<b>Nozzle</b>	LPMS-G01	LPMS-G10

# LPM POLYAMIDE HOT MELT PRODUCTS\*

## General Purpose

### Improved Mechanical Properties

### Resistance to Harsh Environments

### Adhesion to Difficult Substrates

#### Application

Increased Hardness

Thermal Stability

**TH195**

**TH892**

#### Application

UV & Outdoor Resistance

Cold Resistance

**TH868**

**TH858**

**TH865**

#### Application

Very Low Viscosity

Good Adhesion

Very Good Adhesion

**TH817R**

**TH866**

#### Mechanical Performance

Good

Very Good

**TH861**

**TH867**

**TH861HV**

**TH867HV**

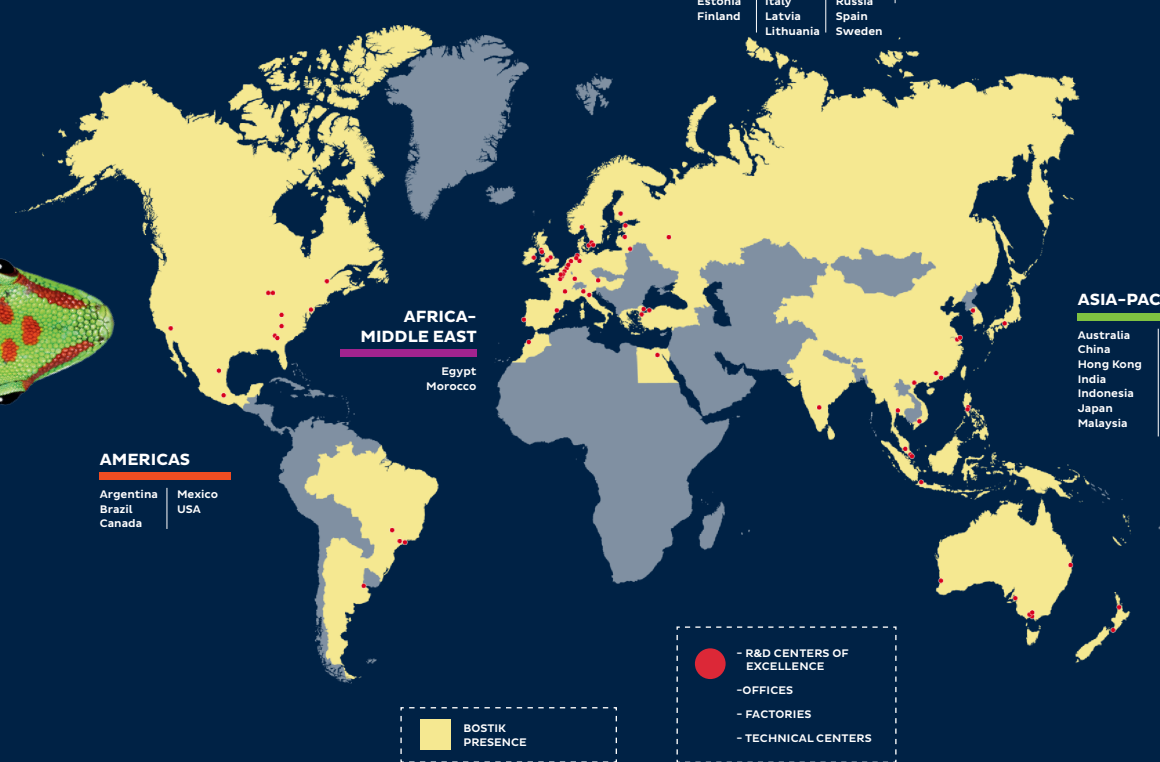
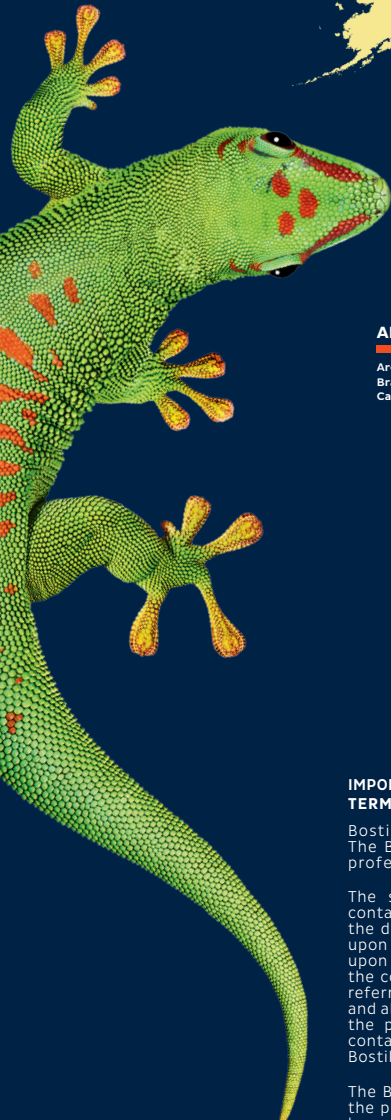
**New! Improved cohesive and mechanical properties**

\*Available grades may vary by region



**Get started with smart, innovative LPM adhesives and equipment today!**

Visit [bostik.com/us](http://bostik.com/us) or [lpms-usa.com](http://lpms-usa.com) to learn more about how we can help your LPM needs.



**EUROPE**

- |         |           |          |                 |
|---------|-----------|----------|-----------------|
| Austria | France    | Norway   | The Netherlands |
| Belgium | Germany   | Poland   | Turkey          |
| Denmark | Ireland   | Portugal | UK              |
| Estonia | Italy     | Russia   |                 |
| Finland | Latvia    | Spain    |                 |
|         | Lithuania | Sweden   |                 |

**AFRICA-MIDDLE EAST**

- Egypt
- Morocco

**ASIA-PACIFIC**

- |           |             |
|-----------|-------------|
| Australia | New Zealand |
| China     | Philippines |
| Hong Kong | Singapore   |
| India     | South Korea |
| Indonesia | Thailand    |
| Japan     | Vietnam     |
| Malaysia  |             |

**AMERICAS**

- |           |        |
|-----------|--------|
| Argentina | Mexico |
| Brazil    | USA    |
| Canada    |        |

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02.01.21

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