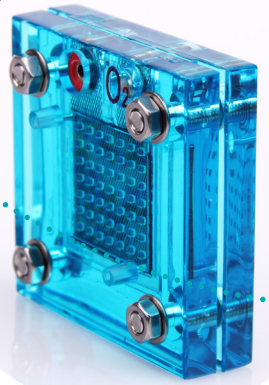
LIGHT-CURABLE MATERIALS FOR ENERGY APPLICATIONS

DYMAX®



Only Dymax offers expert knowledge of light-cure technology and a full array of light-cure products to manufacturers. Dymax is committed to developing a collaborative partnership — applying our extensive process knowledge to your unique application challenges.

We create custom solutions to ensure that chemistry and equipment work together seamlessly for maximum efficiency. Our application engineering team works directly with our customers, assisting with formulation, testing, evaluation, and pre-production trials. An extensive inventory of curing equipment and manual or automated dispensing systems is also available to help you achieve a more efficient, cost-effective manufacturing process.

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About Our Products

Since pioneering light-cure technology over 40 years ago, Dymax has set new standards with innovative ways to co-optimize the assembly or repair/maintenance process with customer-centric solutions that meet today's application challenges. As the energy sector grows, new technologies emerge in designing and manufacturing stationary power generation, distribution, and energy storage solutions that are sustainable and environmentally friendly. There is a need for cleaner, more efficient systems that consume less energy, such as fuel cells, stationary energy storage, and industrial gas turbines.

Dymax offers complete formulation and equipment solutions, light-curing technology expertise, fast response, and environmentally friendly technologies that help support the long-term reliability, performance, stability, and lifespan of renewable energy sources.

Environmental Benefits of Light-Curing Materials

Dymax understands that safe, eco-friendly products benefit our customers, the environment, and us. We have created materials that minimize ecological impact. These attributes include:

- Materials with no added solvents
- Halogen-free materials
- RoHS compliance
- Eco-friendly, one-component materials

Dymax halogen-free conformal coatings and encapsulants are documented by an independent laboratory to meet or exceed standards set forth in IEC 61249-2-21. This international directive defines halogen-free as <900 ppm for chlorine, <900 ppm for bromine, and <1500 ppm total level of both combined. The current test method used for certification is BS EN 14582:2007.

REACH

Dymax endorses the outcome of the REACH program. We are pleased to report that we have registered all affected substances used at Dymax with the centralized database maintained by the European Chemical Agency (ECHA) in Helsinki.

Light-Curable Solutions for Energy Applications

Dymax manufactures light-curable materials, fluid dispense systems, and light-curing equipment that work together seamlessly to optimize assembly processes. Our integrated light-cure solutions consider all manufacturing elements to help design engineers find methods to increase process efficiency, improve product quality, and lower assembly costs. Some potential benefits when using Dymax light-cure solutions include:

Minimized Risk/Enhanced Quality

- Formulations are made to match specific performance needs.
- Materials and equipment are tested properly to ensure compatibility, reducing the chance of defects due to improper dispense or cure.
- Materials absent of added solvents and volatiles help ensure worker safety and regulatory compliance.

Increased Efficiency

- Co-optimized adhesives and equipment provide the fastest cures for shorter cycle times.
- On-demand cures reduce work-in-progress
- Small process footprint frees up space to perform other tasks
- No racking is required, saving time and floor space

Reduced Costs

- Fast cures increase production rates and reduce labor costs
- Patented technologies like See-Cure and Ultra-Red® make in-line inspection easy with no extra costs
- Improved quality reduces defects, waste, and disposal costs
- On-demand cure and instant QC testing eliminate the need for excess inventory

Types of Materials

Adhesives

Dymax light-curable adhesives cure in seconds upon exposure to ultraviolet light and/or visible light, heat, or activator. The adhesives form high-strength, environmentally-resistant bonds to plastic, metal, and glass substrates. Due to their ability to bond to various substrates, they excel at assembling dissimilar materials, which traditional welding methods and other types of adhesives cannot accomplish.

Coatings

Dymax manufactures UV/Visible light-cure conformal coatings to shield printed circuit boards from destructive environments. Materials are applied to electronic circuitry to guard them from moisture, dust, chemicals, and temperature extremes that, if uncoated (unprotected), could result in a complete failure of the electronic system. Formulations are available in IPC-approved, MIL-I-46058C, and UL-listed self-extinguishing grades.

Encapsulants

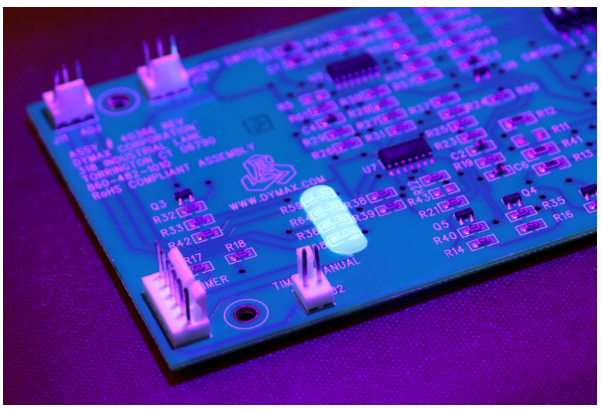
Dymax encapsulants cure in seconds upon UV and/or visible light exposure, providing tough, flexible protection for bare die, wire bonds, or integrated circuits (IC). The encapsulants' fast cure helps reduce processing and energy costs associated with alternative technologies. The materials are all one component, so no mixing is required, and viscosity is consistent. Formulations with secondary moisture cure are availble for shadow areas.

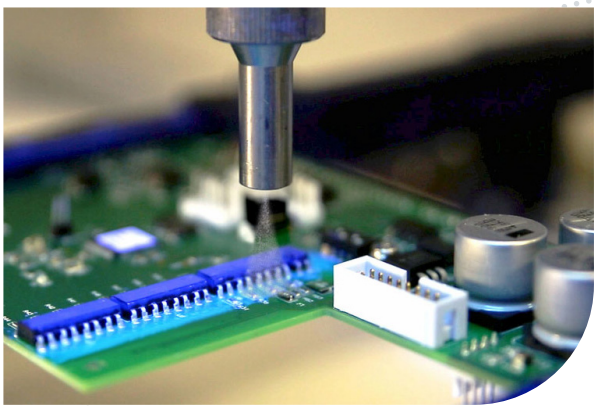
Form-In-Place Gaskets

Light-curable form-in-place gaskets replace tape, PSA die-cut gaskets, 2K epoxies, silicone rope, and RTV sealants. The gaskets conform to complex and intricate channels on both vertical and horizontal surfaces, with thixotropic formulations, and flow into channels with Newtonian formulations. Form-in-place gasket materials act as a barrier to prevent absorption or penetration of air, dust, noise, liquids, gaseous substances, or dirt for sound dampening, vibration dampening, moisture protection, chemical protection, air sealing, and gap filling.

SpeedMask® Maskants

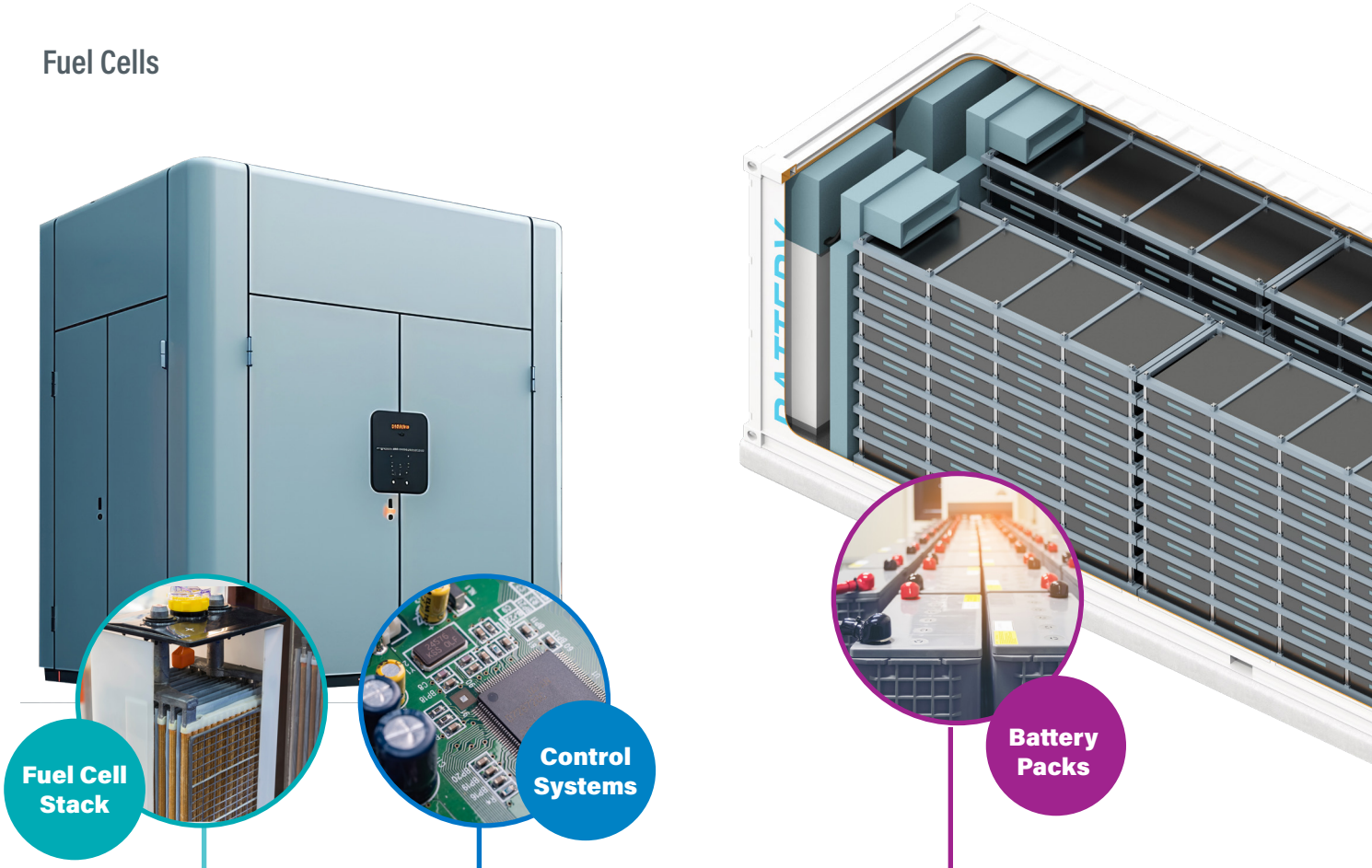
SpeedMask® light-curable temporary maskants provide reliable protection of component surfaces and cavities, PCB connectors, and keep out areas during surface finishing and preparation operations for metal, glass, and some plastics, as well as conformal coating of PCBs. They cure in seconds upon UV/Visible light exposure and replace traditional masking materials, such as tapes, lacquers, waxes, boots, and caps. SpeedMask maskants are easily applied by syringe, dipping, spraying, or screen-printing and are available in peelable or burn-off grades that leave component surfaces residue-free.



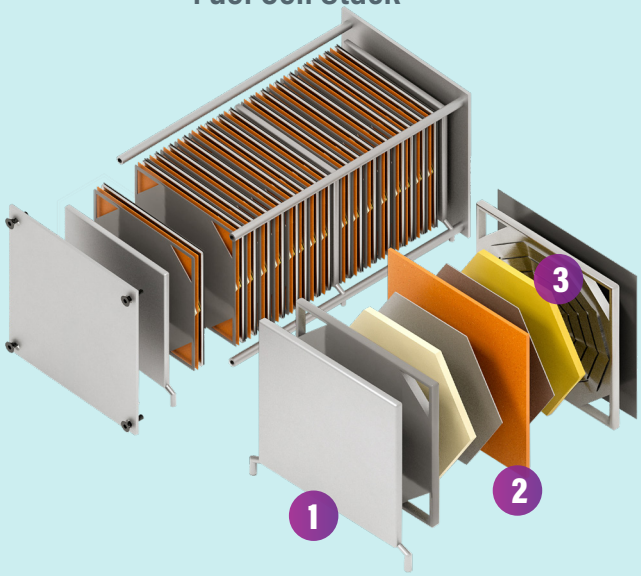


Typical Applications

Fuel Cells



Fuel Cell Stack



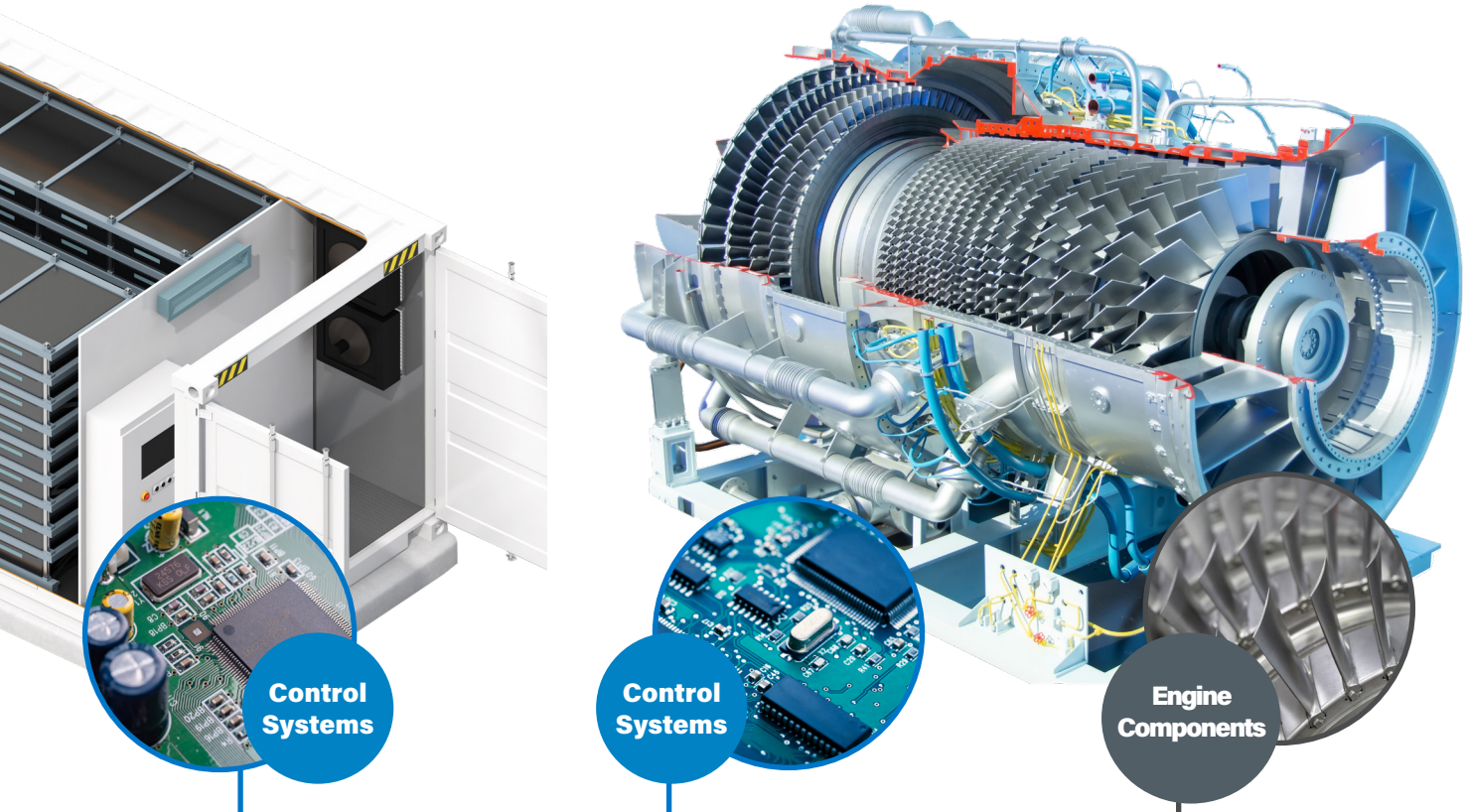
1. Structural Adhesive | 2. Protective Coating | 3. Sealant/Gasket

Battery Pack Applications

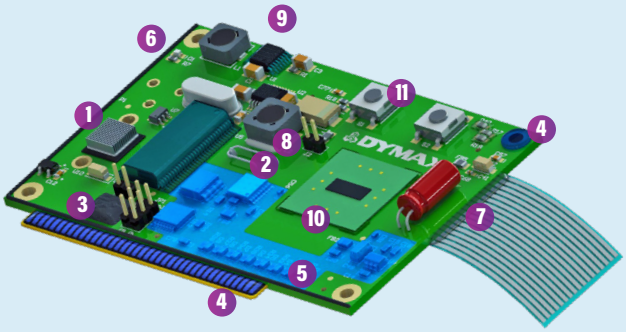
1. Fixture Battery Components | 2. Seal Housings

Energy Storage Systems (Stationary)

Industrial Gas Turbines



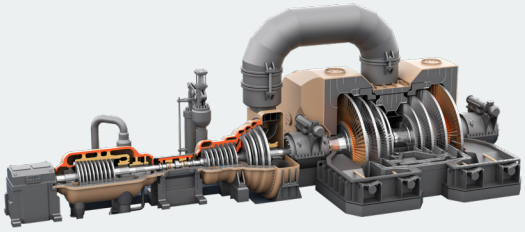
Printed Circuit Board Applications



1. Thermal Interface Material
2. Wire Tacking
3. Glob Top Encapsulant
4. Peelable Mask
5. Conformal Coating
6. Cure-in-Place Gasket
7. Strain Relief
8. Staking
9. Encapsulation
10. Ruggedization/Cornerbond
11. Reinforcement

Additional Applications – Inductors & Transformers - Magnet Bonding

Surface Protection of Engine Components



- Compressor Blades & Vanes
- Compressor Lines & Cases
- Turbine Disks
- Fan Blades
- Combustion Cases
- Combustion Liners
- Nozzle Guide Vanes
- Stacked Vanes
- Many, Many More Components

Processes: Anodizing | Acid Stripping | Chemical Etching | Plating | Air Plasma | HVOF | Painting | Grit Blast | Shot Peening | Machining | Air Flow Testing | Laser Drilling

Fuel Cells

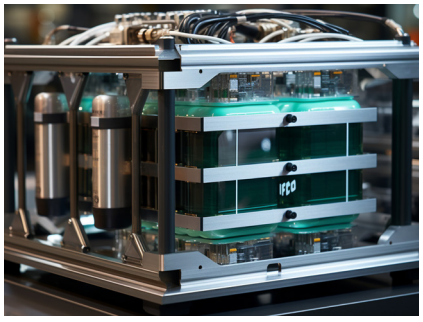
Fuel cell technology is the production of electricity generated from fuel that is oxidized through electrochemical energy conversion. Many systems include SOFC (Solid Oxide Fuel Cells), PEMFC (Proton Exchange Membrane Fuel Cells), and SOEC (Solid Oxide Electrolyzer Cells) that enable them to operate efficiently.

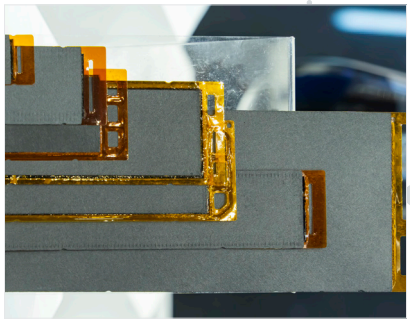
Fuel cell manufacturers and assemblers who are bonding, gasketing, coating, and sealing parts in SOFC and PEMFC fuel cell plates and stacks and solid oxide electrolyzers need solutions that prevent degradation due to high operating temperatures and stress, the ability to join different materials, and provide stability during operation.

Our products include adhesives that form strong bonds to dissimilar substrates that enhance components' structural integrity and mechanical support, gasket sealants that shield assemblies from contaminants and prevent leaks, encapsulants and coatings that protect electronics and stake surfaces from extreme environmental conditions, and maskants that offer secure protection during finishing processes.

Product	UV/Visible	LED	Heat	Moisture	Activator	Description	Nominal Viscosity, mPa	Uncured Appearance	Durometer Hardness	Elongation at Break, %	Modulus of Elasticity, MPa [psi]	Tensile at Break, MPa [psi]	Shrinkage, % (Linear)
SOEC (Solid Oxide Electrolyzer Cells) | SOFC & PEMFC (Solid Oxide & Proton-Exchange Membrane Fuel Cells)													
750	•					Protective Coating; high adhesion; hard and durable; cures tack free; resilient to blast media; sprayable; recommended surfaces include nickel and titanium alloys and cobalt chrome	30.000	Translucent Pink Gel	A50	140	2,5 [370]	3,6 [530]	1,3
750-SC	•					Protective Coating & Sealant; turns purple to pink after sufficient exposure to UV/Visible light; sprayable; high adhesion; recommended surfaces include nickel and titanium alloys and cobalt chrome	30.000	Translucent Purple Gel	A85	124	29 [4.250]	4,5 [659]	1,5
GA-140	•					Sealant (Gasket); moisture and chemical resistant; cures soft and tack free; low outgassing; adhesion to plastics, most metals and nylon	39.000	Colorless Translucent Gel	A35	167	0,71 [140]	1,5 [211]	2
GA-201	•					Gasketing/Sealing; tack free after proper cure; moisture and chemical resistant; UL 157 Certified; adhesion to plastics and plated surfaces	65.000	Opaque Gel	A35	165	0,75 [110]	0,93 [135]	1,1
6-621	•		•		•	Structural Adhesive; forms hard, clear bonds to a variety of substrates including metal, glass, ceramic, and phenolic and filled plastics	800	Clear Translucent	D80	37	550 [80.500]	22 [3.200]	0,04

Featured Product





	Chemical Processes						Recommended Substrates																		
	Air Plasma Spray	Anodizing	Grit Blasting	HVOF	Plating	HVOF	ABS	EP	PA	PC	PEI	PET	Phenolic Plastic	PI	PMMA	PU	PVC	AL Aluminum	Brass	Ceramic	Copper	Cold Rolled Steel	Glass: borosilicate, quartz, mica	Stainless Steel
SOEC (Solid Oxide Electrolyzer Cells) | SOFC & PEMFC (Solid Oxide & Proton-Exchange Membrane Fuel Cells)																								
750	•		•	•																				
750-SC	•	•	•	•	•																			
GA-140						•			•					•		•					•		•	
GA-201																	•					•	•	
6-621						•	•	•	❍	❍	❍	•	❍		❍	❍		•	•	•	•	•	•	

• Recommended ❍ Limited applications

Energy Storage Systems (Stationary)

Stationary energy storage systems (ESS) are designed to store energy for later use, can be charged and discharged multiple times, and are integral to managing, optimizing, and stabilizing energy flows within power grids. Large-scale battery packs and auxiliary power units are two primary types of standalone ESS that provide long-duration energy storage, extended backup power, and enhanced energy utilization efficiency. These systems use control systems comprised of actuators, controllers, and sensors to manage their continuous operation. Dymax solutions include:

- High-strength structural bonding adhesives to firmly secure battery packs and enclosures, preventing loosening or detachment of parts due to vibration, shock, or thermal expansion
- Conformal coatings to shield critical printed circuit components from damaging environmental conditions
- Encapsulants that provide good moisture and corrosion protection for electronic components
- Form-in-place gasketing sealants to create airtight and chemically resistant seals against moisture, dust, and other environmental contaminants, protecting sensitive internal components under thermal cycling and mechanical stresses.

Product	UV/Visible	LED	Heat	Moisture	Activator	Description	Nominal Viscosity. mPa	Uncured Appearance	Durometer Hardness	Elongation at Break. %	Modulus of Elasticity. MPa [psi]	Tensile at Break. MPa [psi]	Shrinkage. % (Linear)
Auxiliary Power Units & Battery Packs													
GA-140	•					Sealant (Gasket); moisture and chemical resistant; cures soft and tack free; low outgassing; adhesion to plastics. most metals and nylon	39.000	Colorless Translucent Gel	A35	167	0,71 [140]	1,5 [211]	2
GA-201	•					Gasketing/Sealing; tack free after proper cure; moisture and chemical resistant; UL 157 Certified; adhesion to plastics and plated surfaces	65.000	Opaque Gel	A35	165	0,75 [110]	0,93 [135]	1,1
9501-F	•	•				Structural Adhesive; excellent adhesion to plastics. metals. and dissimilar substrates; blue fluorescing; 385 nm LED curing; bonds to nickel plated metals	10.000	Colorless Transparent	D65	142	545 [79.000]	17,2 [2.500]	0,6
7501-T-UR-SC		•				Structural Adhesive; Encompass® technology; visual cure confirmation; Ultra-Red® fluorescing; optimized for 405 nm cure; bonds to tin-plated brass	6.500	Blue Translucent. Colorless	D70	125	296 [43.000]	17,9 [2.600]	1,9
Control Systems													
9483	•	•				Conformal Coating; excellent thermal shock resistance; corrosion resistant; blue fluorescing; MIL-I-46058C. IPC-CC-830-B. UL 94V-0. UL 746E	750	Clear. Light Yellow	D60	22	276 [40.000]	16,2 [2.350]	2
9014	UV Only			•		Encapsulant; UV light curing with secondary moisture cure for shadow areas; flexible	18.000	Light Yellow Translucent Gel	D51	63	119 [17.300]	8,2 [1.200]	1,8
9-20558-REV-A	•		•			Encapsulant; UV/Visible light curing with secondary heat cure; high viscosity; flexible; bonds well to FPCs	24.000	Light Yellow Translucent Gel	D35	160	2,3 [340]	6,2 [900]	1,8
9309-SC	•					Ruggedization Adhesive; formulated with See-Cure color-change technology; high viscosity; highly thixotropic; reduces stress on components; great adhesion to various PCB substrates	45.000	Blue Transparent Gel	D57	140	163 [23.800]	22 [3.200]	1,2

Featured Product

	Recommended Substrates																						
	ABS	CAP	Kapton	Lead Frame	PC	PCB	PC/ABS Blend	PCTG	PEI	PETG	PMMA	PS	PSU	PU	PVC	SAN	Silicon	TPU	AL	Ceramic	Cold Rolled Steel	FR-4	Glass	Stainless Steel
Auxiliary Power Units & Battery Packs																								
GA-140	•				•						•				•						•			•
GA-201																			•				•	•
9501-F	•	•			•		•	•		•		•			•	•			•			•	•	•
7501-T-UR-SC	•				•				•		•	•	•	•	•	•		•						•
Control Systems																								
9483				•		•														•		•		
9014			•																			•	•	
9-20558-REV-A					❍					❍					•									
9309-SC				•		•											•			•				

• Recommended ❍ Limited applications

Industrial Gas Turbines

An industrial gas turbine (IGT) converts fuel into mechanical energy that drives a generator to produce electricity. IGT engines comprise compressors, combustors, turbines, shafts, and nozzles, while the control systems include sensors, actuators, and controllers that manage their operation.

- Adhesives provide structural integrity to various substrates, including metals and plastics, essential for components subjected to operational stress.
- Coatings and encapsulants exhibit high-temperature resistance and maintain their properties under extreme thermal conditions.
- Maskants protect parts from surface finishing processes, especially high-value components made from nickel superalloys and high-temperature steel.
- The broad compatibility of light-curable materials with various substrates allows for seamless integration into diverse stages of the turbine assembly process, ensuring strong and reliable bonds.

Product	UV/Visible	LED	Heat	Moisture	Activator	Description	Nominal Viscosity, mPa	Uncured Appearance	Durometer Hardness	Elongation at Break, %	Modulus of Elasticity, MPa [psi]	Tensile at Break, MPa [psi]	Shrinkage, % (Linear)
Control Systems													
9483	•	•				Conformal Coating; excellent thermal shock resistance; corrosion resistant; blue fluorescing; MIL-I-46058C, IPC-CC-830-B, UL 94V-0, UL 746E	750	Clear, Light Yellow	D60	22	276 [40.000]	16,2 [2.350]	2
9014	UV Only			•		Encapsulant; UV light curing with secondary moisture cure for shadow areas; flexible	18.000	Light Yellow Translucent Gel	D51	63	119 [17.300]	8.2 [1.200]	1,8
9037-F	•		•			Encapsulant; flexible with excellent moisture and thermal resistance; blue fluorescing for easy inspection	55.000	Translucent Gel	D40	110	6,2 [900]	5,8 [850]	2,2
9422-SC	•					Encapsulant; See-Cure color-change technology for cure confirmation; good shock absorption; bonds plastics	38.000	Blue Transparent Gel	D50	170	98 [14.000]	16 [2.300]	1,6
9-20558-REV-A	•		•			Encapsulant; UV/Visible light curing with secondary heat cure; high viscosity; flexible; bonds well to FPCs	24.000	Light Yellow Translucent Gel	D35	160	2,3 [340]	6,2 [900]	1,8
9309-SC	•					Ruggedization Adhesive; formulated with See-Cure color-change technology; high viscosity; highly thixotropic; reduces stress on components; great adhesion to various PCB substrates	45.000	Blue Transparent Gel	D57	140	163 [23.800]	22 [3.200]	1,2
Engine Components													
750	•					Protective Coating; high adhesion; hard and durable; cures tack free; resilient to blast media; sprayable; recommended surfaces include nickel and titanium alloys and cobalt chrome	30.000	Translucent Pink Gel	A50	140	2,5 [370]	3,6 [530]	1,3
750-SC	•					Protective Coating & Sealant; Turns purple to pink after sufficient exposure to UV/Visible light; sprayable; high adhesion; recommended surfaces include nickel and titanium alloys and cobalt chrome	30.000	Translucent Purple Gel	A85	124	29 [4.250]	4,5 [659]	1,5
758-H	•	•	•			Acid Stripping Coating; high adhesion; LED (405 nm) optimized; secondary heat cure; low shrinkage; trimmable after cure; resistant to nitric and hydrochloric acid; recommended surfaces include nickel and titanium alloys	10.000	Red Gel	A80	140	2,3 [330]	3,4 [500]	1,7

Featured Product

	Recommended Substrates									Finishing Processes					
	Flex Circuit	Kapton	Lead Frame	PCB	Silicon	AL	Ceramic	FR-4	Glass	Acid Stripping	Air Plasma Spray	Anodizing	Grit Blasting	HVOF	Plating
Control Systems															
9483			•	•			•	•							
9014		•						•	•						
9037-F		•		•		❍		•	•						
9422-SC	❍		•	•	•		❍								
9-20558-REV-A	•														
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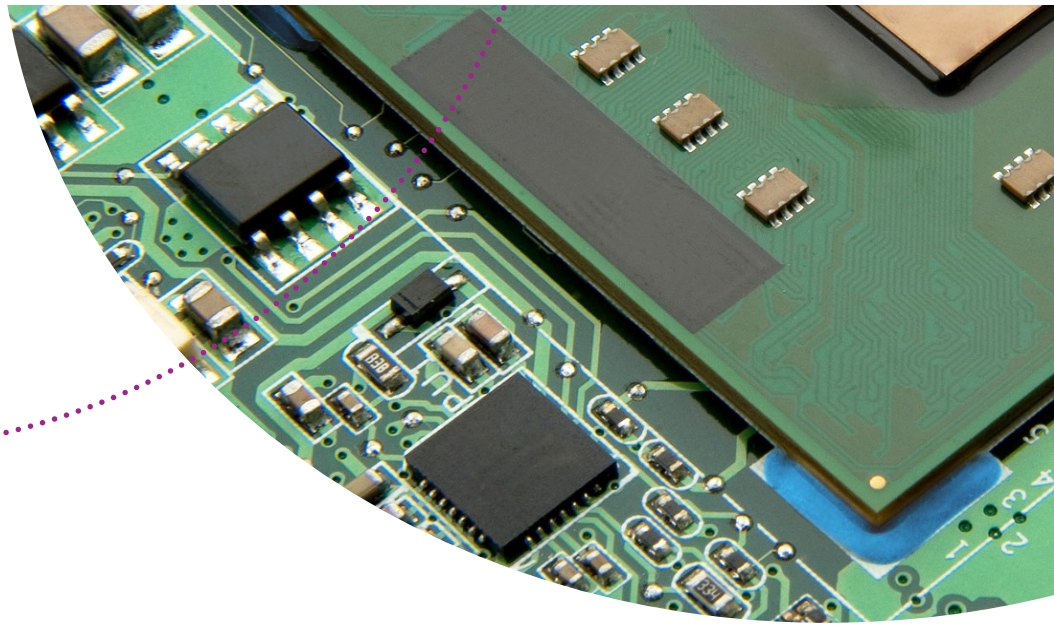
• Recommended ❍ Limited applications



Adhesive Technologies

As an innovator in the adhesive and coating industries, Dymax strives to create new technologies that help manufacturers increase process efficiency, productivity, and throughput while decreasing costs and inventory. Our dedication to innovation has resulted in over 30 adhesive and equipment patents and numerous awards for our innovative technologies and service.

Our R&D experts always strive to create new technologies to help manufacturers improve their processes and minimize risk. Our current portfolio of technologies provides various benefits, including easier bond line inspection and cure confirmation for better quality control, faster cures for quicker processing, and curing in shadowed areas to eliminate concerns about uncured material.

Confirm Placement & Cure - Patented See-Cure Technology

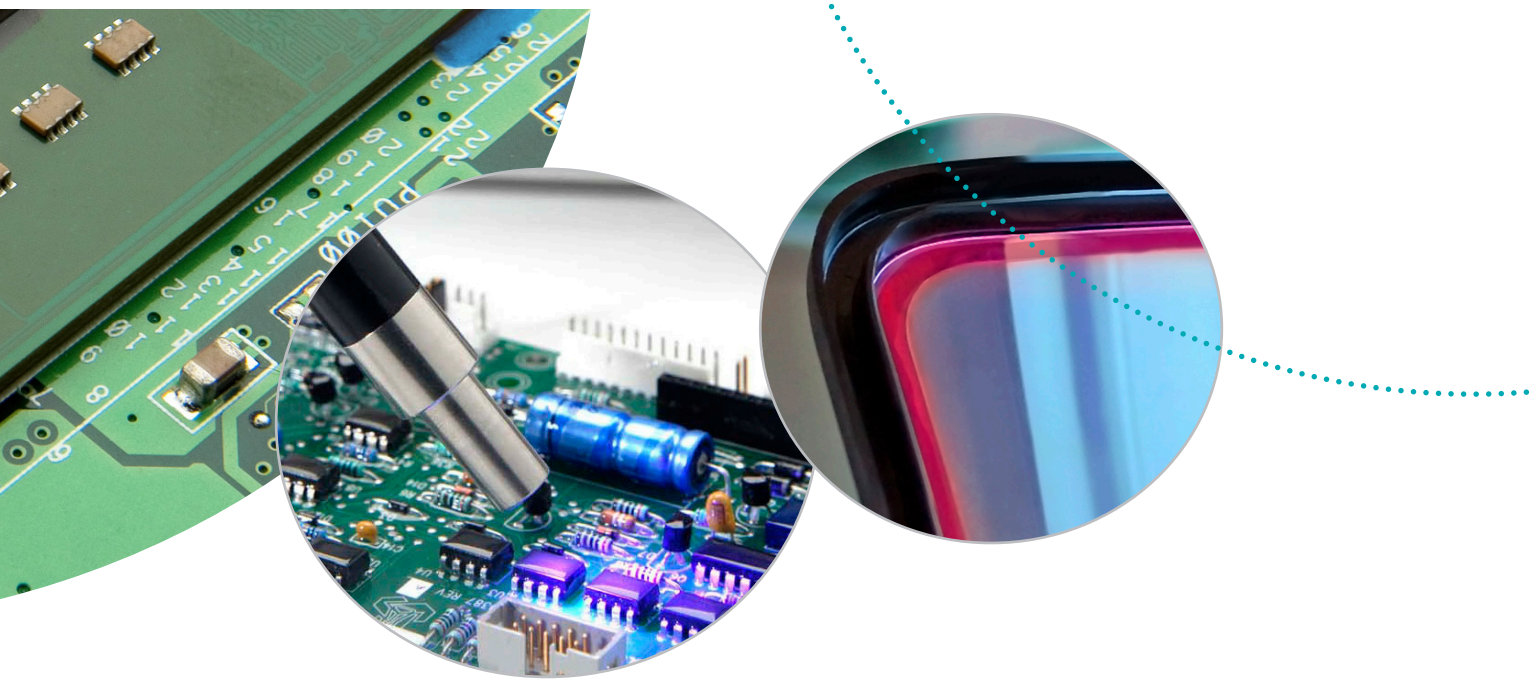
Dymax adhesives, formulated with See-Cure technology, have built-in cure validation, making it easy for operators or simple automated inspection equipment to confirm a cure without investing in specialized equipment. These materials are bright blue in their uncured state, making them highly visible when dispensed onto substrates. Workers can easily confirm the adhesive placement and quantity with just their eyes.

After the adhesive is exposed to light, the color transitions from blue to colorless. This cure indicator ensures the adhesive is completely cured, providing a critical safety feature for manufacturing processes.

Enhance Bond-Line Inspection - Ultra-Red® Technology

Adhesives formulated with Ultra-Red® remain colorless until exposed to low-intensity UV light (360-380 nm); at which point, they fluoresce bright red. The is ideal when bonding plastics that naturally fluoresce blue. Ultra-Red fluorescence does not absorb the same wavelengths as those used to cure the adhesive, resulting in faster, deeper cures when compared to blue fluorescing products.

The Ultra-Red® fluorescing compound is patented and exclusive to Dymax. When measured, this compound produces a unique energy peak that other fluorescing compounds cannot reproduce. This offers manufacturers the ability to assemble or mark their products so they can be positively identified.



Speed up Production with Faster Cures - LED Light-Curing Technology

Dymax offers specially formulated LED light-curable adhesives that are optimized to work seamlessly with Dymax LED light-curing systems. The adhesives range from fast to ultra-fast cure speeds to accommodate specific assembly needs. LED-curing equipment is available in many different styles, including spot lamps, flood lamps, and conveyors, to accommodate various process requirements.

Cure in Shadows - Multi-Cure® Light/Heat Cure Technology

Multi-Cure® adhesives and coatings combine the high-speed cure of UV or UV/Visible light with secondary cure mechanisms that enhance polymerization. These mechanisms, including moisture, thermal, or activator cure, are useful when light can only reach a portion of the bond line or when tacking a part before the final cure to allow easier handling and transport during the manufacturing process.

Enhance Bond-Line Inspection & Confirm Cure - Encompass® Technology

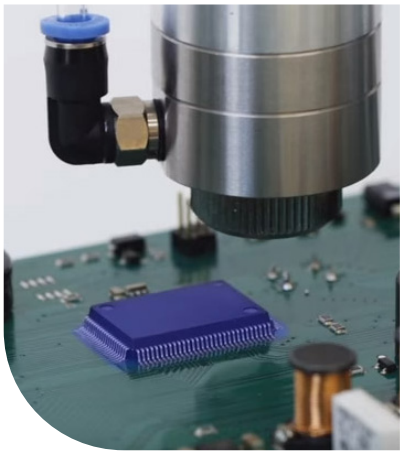
Dymax adhesives formulated with Encompass® technology incorporate Dymax exclusive Ultra-Red® fluorescing and See-Cure color-change technologies into one light-curable product. As a result, manufacturers gain efficiencies from rapid on-demand curing with easy cure confirmation and post-cure bond-line inspection.

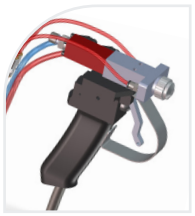
Cure in Shadows - Dual-Cure Light/ Moisture-Cure Technology

Dual-cure coatings are formulated to ensure a complete cure in applications where shadow areas on high-density circuit boards are a concern. Previously, areas shadowed from light were managed by selective coating – eliminating the need to cure in shadow areas – or a secondary heat-cure process. Shadow areas cure over time with moisture, eliminating the need for that second process step or concerns of component life degradation due to temperature exposure.

Dispensing Equipment

Dymax has developed high-quality, field-proven dispensing systems for many adhesive and fluid applications. These systems include automated and manual dispensing valves, spray valves and guns, controllers, material reservoirs, and related components for seamless integration into assembly processes. The systems provide accurate, consistent dispense for low- to high-viscosity fluids. Dispensing systems with adjustable suck-back control and dispensing valves that offer contaminate-free dispensing are available.





SD-200 Digital Syringe Dispenser

This dispensing system is ideal for an operator workstation or can be integrated into an automated process. It provides an accurate way to dispense low-to-high-viscosity materials from a syringe. The system is easy to set up and operate.

eco-PEN450 Dosing System

The eco-PEN 450 is ideally suited for dispensing very precise volumes of low- to medium-viscosity materials. It offers maximum volumetric precision for both dot and bead applications, making it an excellent choice for masking components on PCB boards or other small-area applications.

eco-SPRAY Precision Micro-Spray System

This micro-spray system is excellent for many applications and is used with various low- to high-viscosity spray media. Users can achieve a variety of spray volumes, from dot to endless spraying.

SG-200 Super-Flow Spray Gun System

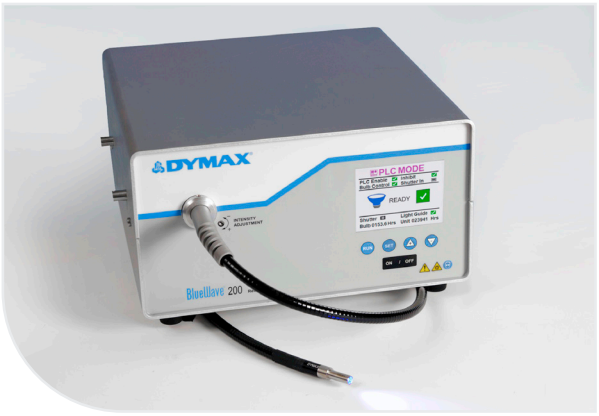
Dymax SG-200 super-flow spray gun systems are designed for masking and coating applications requiring a significantly higher flow rate. The systems are ideal for dispensing fluids with viscosities up to 80.000 mPa. This system is an excellent option for manually masking a large area.

Model 400 Hand-Held Needle Valve System

The Model 400 needle valve is made for dispensing very precise dots or fine beads of low- to medium-viscosity materials. The valve is hand-held but is compact and lightweight, making it easy and comfortable to handle.

Light-Cure Systems

Dymax designs and manufactures a wide range of curing equipment, including spot lamps, flood lamps, conveyor systems, radiometers, and other accessories. Dymax systems are optimized to work with light-curable adhesives to gain process efficiencies by targeting rapid surface curing, depth of cure, and speed of cure, all while delivering light rapidly and economically. CE-marked equipment is available.



Spot Lamps

Spot lamps deliver light to a very precise location. The lamps can be incorporated into high-speed automated assembly lines, or an operator can use them manually. Dymax offers multi-spectrum light-emitting lamps that use high-pressure mercury vapor bulbs and light-emitting diode spot lamps that use an array of surface-mounted LEDs instead of traditional metal halide or mercury bulbs. LED emitters are available in 365, 385, and 405 nm wavelengths.

BlueWave® 200

- High intensity UV curing with adjustable output
- Manual and timed irradiance for process integration

BlueWave® MX-150

- Industry leading high intensity spot
- LED curing emitters in 365, 385, and 405 nm
- Operates up to four emitters from a single controller
- Machine integration controller with PLC/Ethernet communication

BlueWave® QX4

- Industry leading high-intensity LED head
- One controller operates up to four LED heads
- Highly flexible connection and small head for precision light delivery

Flood Lamps

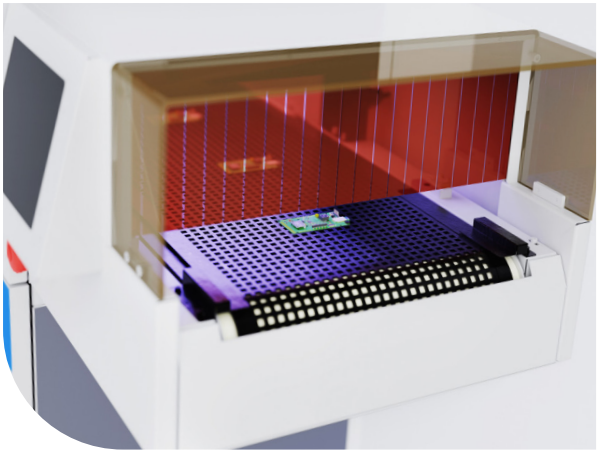
Static flood-lamp systems are suited for area curing or curing multiple assemblies. Dymax has lamps that utilize moderate- to high-intensity, multi-spectrum UV/Visible light or LEDs for fast curing. Integrate the systems into existing manufacturing processes by mounting them above high-speed assembly lines to achieve rapid cures. Create custom curing systems with optional shutter assemblies, mounting stands, and shields.

BlueWave® FX-1250 LED Flood Lamp Systems

- High intensity and industry leading uniformity
- 12,7 cm x 12,7 cm curing area
- Operate multiple emitters from a single controller
- PLC communication for machine integration

ECE Flood Lamp Systems

- Two reflector sizes (12,7 x 12,7 cm or 20,3 x 20,3 cm) to quickly cure large areas
- Metal halide, mercury vapor and visible spectrum bulbs for curing all formulations
- Timed shutter available for process setting



Conveyor Systems

Conveyor systems consist of a moving belt that passes through a curing tunnel with multi-spectrum lamps mounted above or on each side for rapid curing of parts. These conveyor systems offer consistent, fast, and safe curing. They can be outfitted with standard metal halide (longwave UV), mercury (shortwave UV), visible bulbs, or LED flood arrays. Consistent line speed, lamp height, and intensity provide a consistent light-curing process for high throughput.

UVCS V3.0 LED Conveyor Systems

- Uses LED emitters in 2 x 2 or 1 x 3 centered arrangements
- 30-cm wide belt with reversible operation and automated sensing of part entry
- Intensity and timing control of LED emitters
- Manual and oven modes with program storage for process setting
- Speed control from 0,4 ft/min to 7,8 ft/min
- 20.3 cm touch screen HMI

UVC-8 Conveyor System

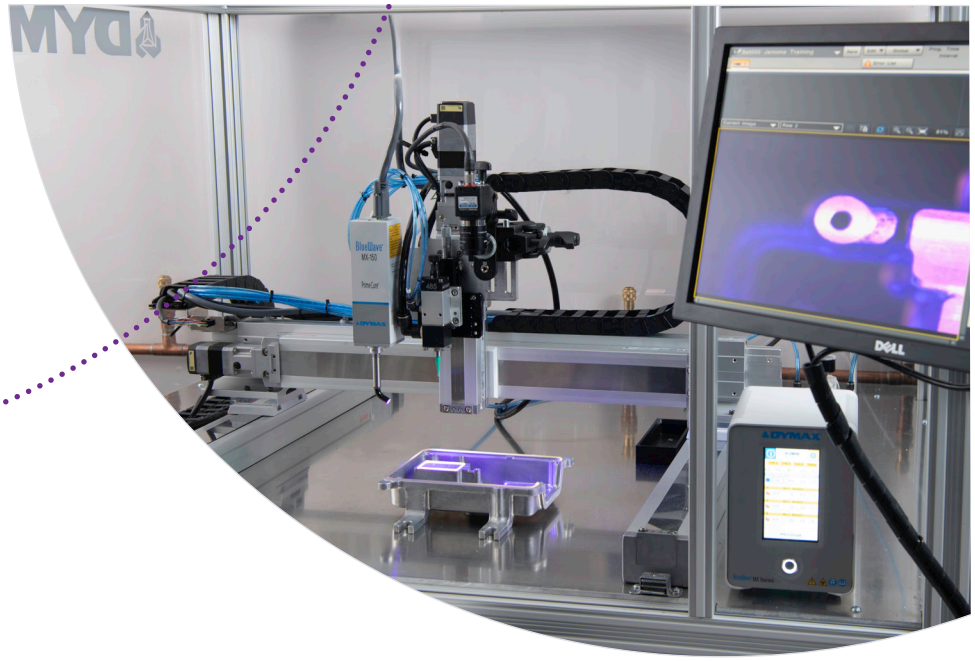
- Ideal for production and lab environments
- High intensity with belt speeds of 0,5 - 12 m/min
- 22-cm wide PTFE-coated belt
- Equipped with up to three lamps

UVC-5 Conveyor System

- Ideal for curing small parts
- Medium intensity with belt speeds of 2-26 m/min
- 12-cm wide PTFE-coated belt
- Equipped with one lamp

Radiometers

The lamp intensity and dosage measurement are critical to successfully implementing light-curing technology. Dymax radiometers allow operators to monitor and document a light-curing process.



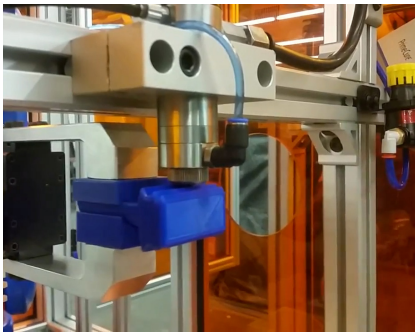
Systems Integration

Dymax has an expert system integration team to help customers with energy applications and projects. We have years of experience designing and implementing automated and robotic adhesive dispensing, curing, and finishing solutions for advanced assembly and manufacturing processes. The team looks at challenges holistically, managing a project from the concept phase through feasibility testing and production design. We are highly engaged with customers each step of the way and consider all aspects of integrating our products into your solution.

Some benefits of working with Dymax:

- Close collaboration with industrial OEM machine builders and integrators
- Partnership with established market-leading dynamic parts handling and automation organizations and professionals
- Experienced guidance on precision dispensing, spraying, dosing, and fluid handling requirements and challenges
- Expertise in the energy, aerospace, automotive, electronics, and medical industries
- Emphasis on creating individualized solutions suitable for all applications and budgets
- Collaborate with our premier partner, Electronic Coating Technologies, to service customers in the Americas and Europe who require conformal coating services and contract manufacturing for their electronics applications.

Additional capabilities include assistance with specifying and selecting equipment, sub-contract application services, application and process development, and in-house solutions that can be executed at the customer's facility.



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