



Solar Energy

Fluid Handling Equipment for Solar Energy Applications



PROVEN QUALITY. LEADING TECHNOLOGY.

Graco® Solutions for the Global Solar Energy Market



Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous material.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions.

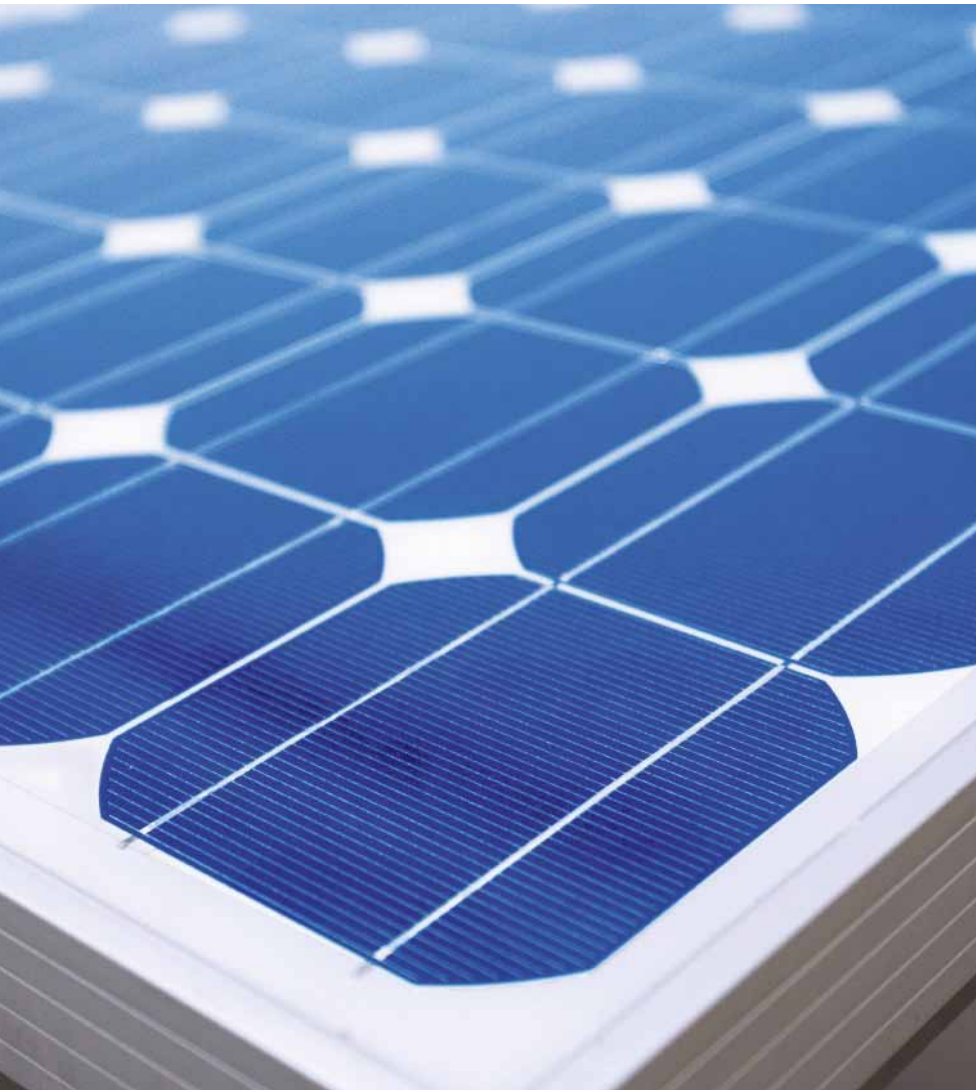


Solutions that Fit Your Growing Needs

As your solar energy company grows, Graco is ready to support productivity demands. Count on Graco equipment for superior adhesive and sealant dispensing, consistent performance, and unsurpassed quality and reliability.

As the world leader in fluid handling systems, Graco offers complete packages for solar energy manufacturing applications including equipment for:

- Applying primary and secondary seals on solar panels
- Potting or encapsulating J-boxes, inverters and charge controllers
- Gasketing or sealing J-box lids, solar module frames, battery cell plates and battery lids
- Thermal management of solar cells, inverters, and charge controllers
- Bonding solar cells and solar mirrors



Who can benefit from Graco Sealant and Adhesive Equipment?

- Commercial end-user product manufacturers
- Automated processes equipment suppliers
- Charge controller manufacturers
- Solar PV module manufacturers
- Inverter manufacturers
- Battery manufacturers
- PV cell manufacturers
- Material suppliers

Use a single supplier

By using one supplier you have similar equipment functionality across your plant, simplified training, easier maintenance and lower carrying costs with common wear parts, and better service and support.

A Network of Support for the Solar Energy Market



Global support

With infrastructure throughout the world, your company will benefit from Graco's knowledgeable, global network of professionals.

Proven track record

Graco has close working relationships with many of the world's leading manufacturers and material suppliers serving the solar energy market. With Graco, you can expect responsive service and support, as well as the accuracy and reliability you demand from your manufacturing equipment.

Global distribution

With more than 30,000 distributors worldwide, you can count on quick turnaround times for replacement parts and service. With Graco's authorized distributors, you have access to experts who understand the unique needs of your business.

Global manufacturing

- Minneapolis, Minnesota USA
- Rogers, Minnesota USA
- Anoka, Minnesota USA
- Sioux Falls, South Dakota USA
- North Canton, Ohio USA
- Suzhou, China
- Maasmechelen, Belgium



Innovative Solutions that Help Shape Your Future



Innovation

Because Graco invests heavily in research and engineering, you get innovations and technologies that will increase your production capacity.

Built for performance

You'll discover that our equipment is designed to streamline your operation and maximize uptime. In addition, Graco equipment is built with precision-machined components for longer life and reliability.



Build your bottom line by:

- Maximizing your plant's production capacity
- Reducing rework due to better, more reliable equipment performance
- Saving labor costs and training time with easy-to-use, intuitive user controls
- Taking charge of your fluid inventory and managing your quality control
- Minimizing material consumption while maximizing machinery efficiency

Choose Graco

From potting J-boxes to sealing solar module frames, Graco is your source for durable, reliable fluid handling systems required for manufacturing the highest-quality solar energy components. Depend on Graco for long-lasting, reliable performance.

Solar Photovoltaic Modular Assembly Equipment

Graco PD44 Meter, Mix and Dispense Valve

- For precise micro-dispensing of plural-component materials
- Ideal for potting junction boxes, bonding mirrors and heat sinks
- Rod positive displacement metering
- Ratio range – 1:1 to 25:1
- Shot size – 0.005 to 5.0 cc's
- Easily integrated with machine automation



Graco PR70 Meter, Mix and Dispense System

- Dispenses plural-component materials
- Ideal for potting junction boxes and sealing module frames
- Offers precise mix ratio and shot repeatability
- Ratio range – 1:1 to 24:1 and available in fixed or variable ratio configurations
- Shot size – 2.0 to 70 cc's
- Operator actuated or integrated with machine automation

Graco PGM Metering System

- Precision gear metering dispense system for sealants and adhesives
- Dispenses ambient, warm melt and hot melt materials; low to high-viscosity
- Touch-screen controls are easy to use, easy to integrate
- Ideal for hot-applied edge sealant, frame sealant and rail bonding applications
- Available with ribbon or bead extrusion nozzles

Sealant and Adhesive Bulk Supply Systems

Graco Supply System

- Feed system for single-component materials at ambient temperatures
- Delivers materials from containers to metering and dispensing systems
- Ideal for bonding junction boxes and sealing solar modules
- Tandem operation available to improve your productivity
- Complete line available – for pail or drum sizes from 20 to 200 liter (5 to 55 gal)

Graco Therm-O-Flow® Bulk Melt System

- Heats and delivers single-component materials
- Ideal for bonding junction boxes to back panels and applying primary sealants to solar panels
- Industry-leading melt rates
- High output for improved production capacity
- Intuitive controls – easy reporting and self-diagnosis
- Configurable for tandem operation
- Handles 20 to 200 liter (5 to 55 gal) drum sizes



Automation Systems



Liquid Control C-402 and C-404 Benchtop Dispensing System

- Low-cost benchtop Cartesian motion platforms
- Ideal for applying sealants to junction boxes
- Easily programmed for point-to-point or continuous 2D and 3D path applications
- Work area: 200 x 200 x 100 mm and 400 x 400 x 100 mm
- Easily integrated with Graco dispensing equipment



Materials and Applications Testing

Graco Laboratory for Application Development

- Works closely with you to analyze your materials, application and unique challenges
- Provides services for testing new materials and configuring equipment for your application
- By leveraging Graco's extensive product line, we can ensure the recommended equipment solution meets your requirements
- Material preparation capabilities include heating, vacuum degassing, agitation and bulk transferring
- Data collection and reporting capabilities
- Experienced lab technicians at your service
- Located in North Canton, Ohio



For more information, call 877-844-7226 or email info@graco.com



ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

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The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

GRACO LOCATIONS

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Graco Inc. is registered to I.S. EN ISO 9001

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