GRACO

InvisiPac®

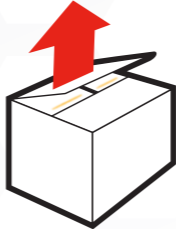TANK-FREE™ HOT MELT DELIVERY SYSTEM

FOR CASE + CARTON PACKAGING

PROVEN QUALITY. LEADING TECHNOLOGY.

Confidence is a reliable seal – every application, every time.
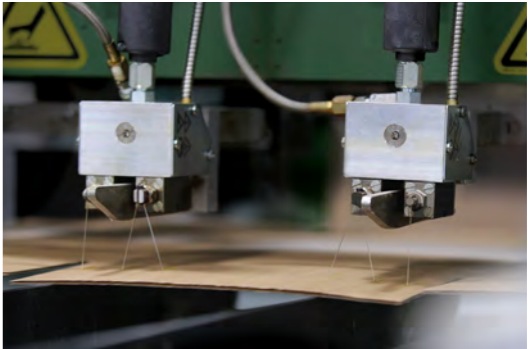
Unplanned downtime

Pop-opens

Clogged nozzles

Increasing adhesive costs

Are you experiencing these common end-of-line packaging problems?

If you're using tank-based hot melt delivery systems for your case & carton packaging line, it's likely that you are losing productivity (and a good amount of sleep) as a result.

At Graco, we understand that continued downtime in case or carton sealing applications can result in added costs or returned goods - leading to significant profit loss. This understanding, along developing revolutionary fluid dispense systems since 1926, has driven our efforts to develop the most reliable, most profitable hot melt adhesive systems available today.

To *improve profits and regain confidence,* experience the InvisiPac® difference for consistent sealing and increased uptime for end-of line packaging operations.

InvisiPac®
TANK-FREE™ HOT MELT DELIVERY SYSTEM

The most reliable, most profitable hot melt system

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Keep your lines running + drive more profitiablity

With InvisiPac, you'll experience **far less downtime** and **produce more** with a better seal. You'll use **far less adhesive** and be able to drastically **reduce your spare parts inventory.** All delivering more profits to your bottom line. And have the data to prove it!

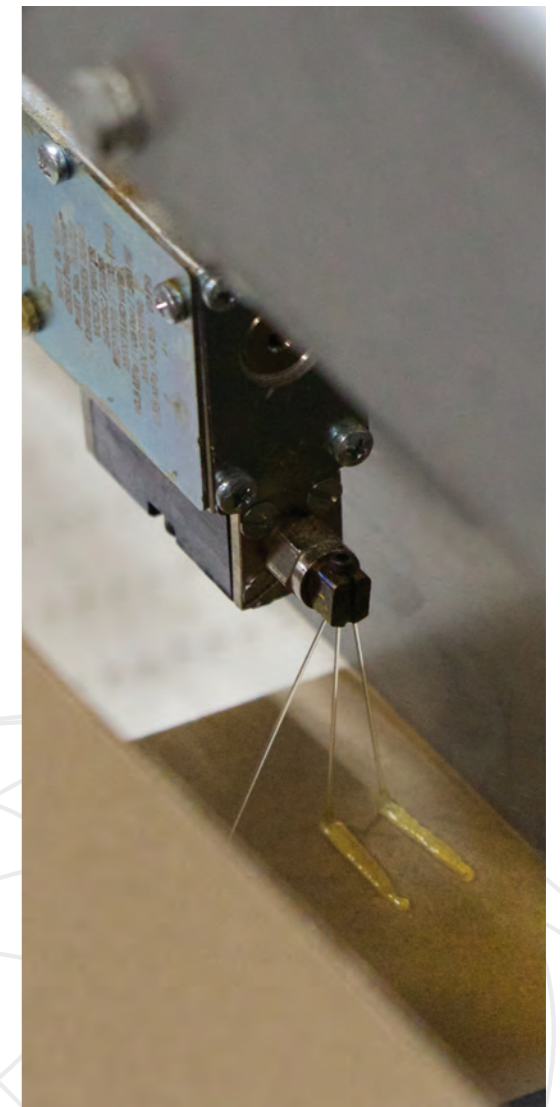How? The difference is the technology. **No tank. Period.**

The innovative design, with **70% larger melting surface** than the closest competitor, melts your glue fast, and dispenses it immediately, controlling a consistent viscosity and dispensing exactly what is needed, down to the hundredth of a gram.

Increase your productivity

Save more money

Drive efficiencies with data

Unmatched reliability.

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InvisiPac

Why InvisiPac is different...and better

Tank based systems have long heat up times, causing operators to leave systems on exposing the adhesive to extended periods of heat. This degrades material quality and produces time consuming, plug-forming char. Tank based systems are also prone to thermal shock from large amounts of adhesive being dumped into the tank during refill. This causes temperature fluctuation, changing glue viscosity, causing inconsistencies in dispensing and uncontrolled glue waste.
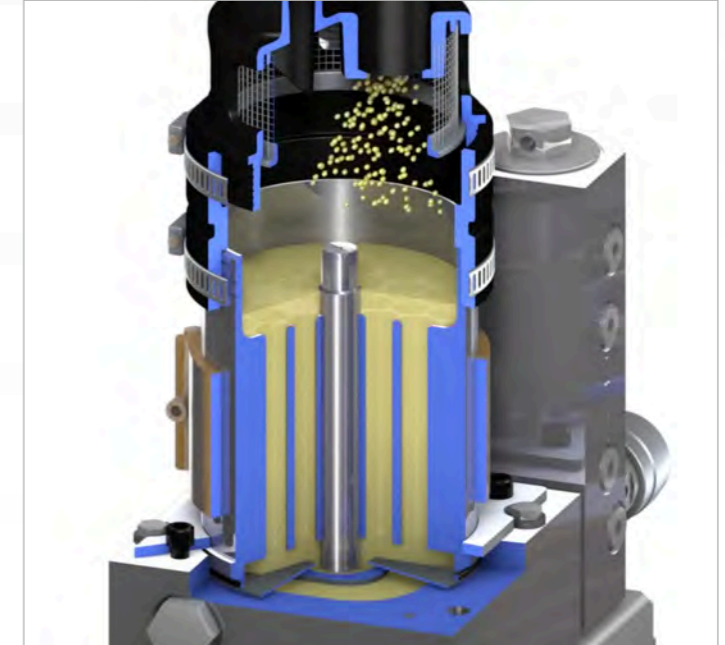
With InvisiPac:

1 An ultrasonic sensor monitors glue in the melting chamber automatically adding glue.

2 With its efficient heat transfer design, glue melts quickly and maintains a consistent temperature.

3 Less time your glue cooks at high temperature means less char, less maintenance, less degradation and more uptime.
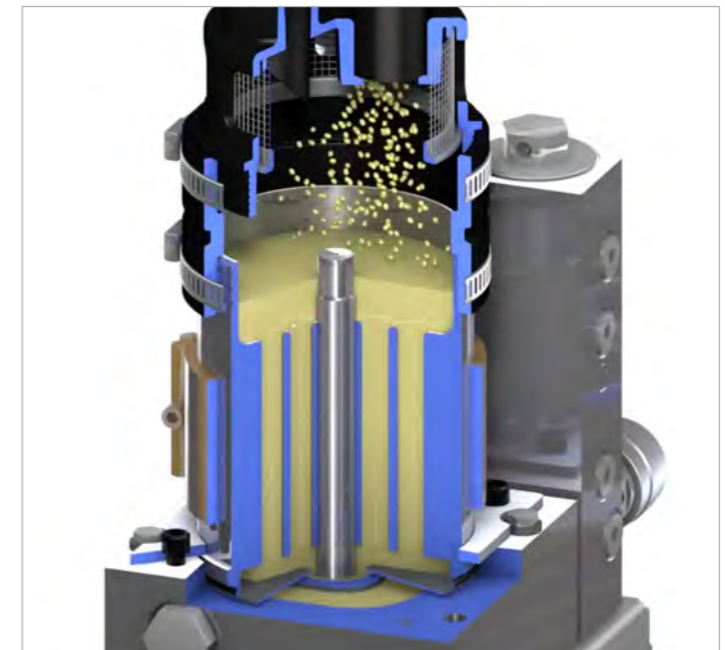
More choices
You can use low-grade adhesives when it makes sense or high-grade adhesives to ensure premium performance.

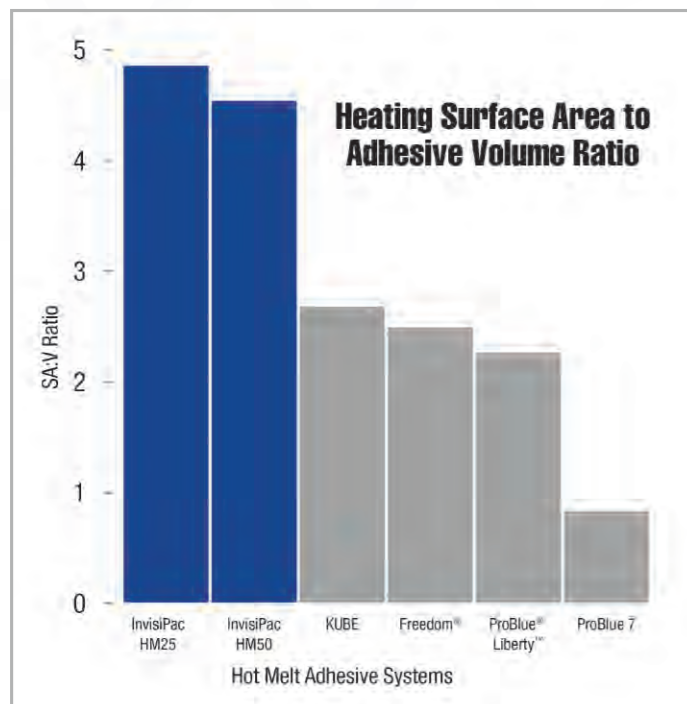1

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The Tank-Free™ difference

Tank & Tank-Less Systems ▶

- Heat to operating temperature slowly due to low melting surface area
- Keep large quantities of adhesive at high temperatures
- Allow degradation of adhesive integrity
- Create char and cause plugged nozzle
- Exposure to burn hazards

Tankless

Tank

Heating Surface Area to Adhesive Volume Ratio

Hot Melt Adhesive Systems

InvisiPac's Tank-Free System ▶

- Heats to operating temperature quickly due to high melting surface area
- Maintains continuous flow of heated-on-demand adhesive
- Safeguards adhesive integrity
- Eliminates plugged nozzles by eliminating adhesive char
- Eliminates exposure to burn hazards

Tank-Free

How InvisiPac works for you

1 **Automatic Feed System** with patented technology has a self-learning feed algorithm that takes the guess work out of filling your hot melt system. No more tuning or calibrating your fill hoping you get the right frequency.

2 **Adhesive Melter** has innovative melting chambers that melt adhesive quickly and dispenses it immediately, eliminating adhesive char build up and maintains integrity of adhesive by not letting it sit at high temperatures for long periods of time.

3 **Advanced Display Module** provides an accurate control of the complete process (temperature, adhesive usage, dispense shot sizes, performance notifications).

4 **Superior heated hose design** is char resistant, reducing char buildup, resulting in more uptime and lower maintenance costs.

5 **Plug-Free Applicators** have a free-flow manifold design and integrated module filtering that eliminates nozzle plugs and can operate up to 10,000 cycles per minute.

GRACO

The hot melt system that runs reliably, unnoticed and invisible.

InvisiPac

The clear choice

Increase your productivity.

Eliminate Downtime

- No char, no nozzle plugs.
- No more time consuming tank scraping product maintenance

Parts Last Longer

- Less plastic and built to last.
- 10+ years pump lifetime.
- 500 million + gun cycles.

Improved Operator Safety

- Design eliminates burn hazard risks and keeps your employees safe.

Save more money.

Guaranteed Savings

- Use less material.
- Reduce maintenance and spare parts.

Better Seal

- Reduce costly pop-opens by having glue do what it's suppose to do by not cooking it away and producing char.

Use Less Energy

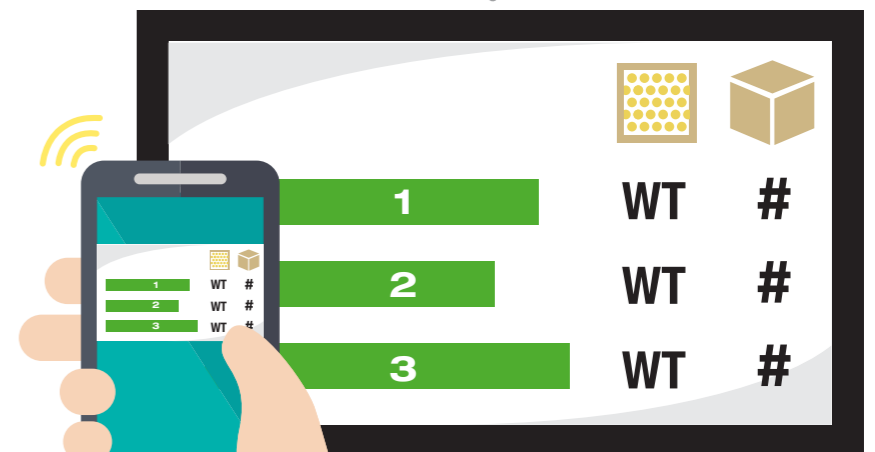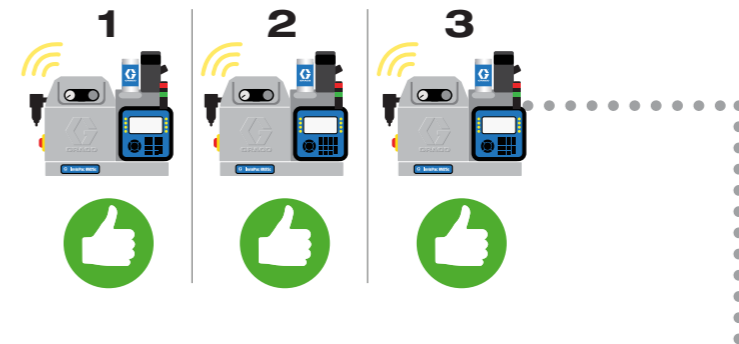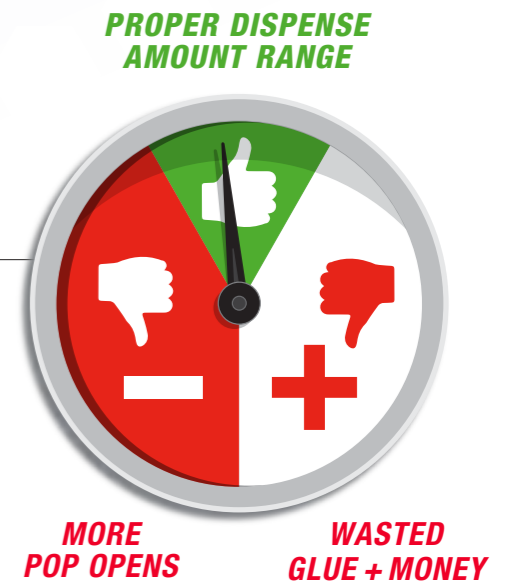- Heats up in < 10 minutes and has an auto shut off after 1 hour idle time.

Drive efficiencies with data.

Know Your Glue Usage

- Measure the right amount of glue, control a consistent bead and track your usage grams per case, so you can put exactly what you need where you need it...and prove it.

Optimize Your Lines

- View your lines performance and receive alerts maintaining your desired, optimal settings anywhere, anytime.

PROPER DISPENSE AMOUNT RANGE

MORE POP OPENS

WASTED GLUE + MONEY

1 | 2 | 3

InvisiPac HM25c

GRACO

GET REAL TIME FEEDBACK

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HM25C: Compact reliability, significant profitability

InvisiPac HM25C

New design for compact solutions

- Easily integrates into your existing packaging lines.

- 25 lb/hour (11.3 kg/hour) melt rate.

- Light tower alerts when material usage is out of desired range.

- 10 minute start up.

- Auto shut-off capability.

- Auto-tuning fill adjusts over time as conditions change reducing need for calibration.

- Connection for 8 zones

- Integrated material tracking

Leading technology

No thermal shocking

- Continuous supply of adhesive
- Level sensor maintains consistent melt rate
- Promotes consistent material usage

Reliable performance

- Minimizes unplanned maintenance/shutdowns
- Removes the human factor

Safety

- No exposure to molten hot melt adhesive

1 *Shaker built into vacuum*

Reduces air consumption by eliminating
the need for an external shaker

2 *Feeds from center of hopper*

Ensures adhesive does not build up on one side

3 *Vibration arms*

Breaks up clumps and reduces adhesive bridging
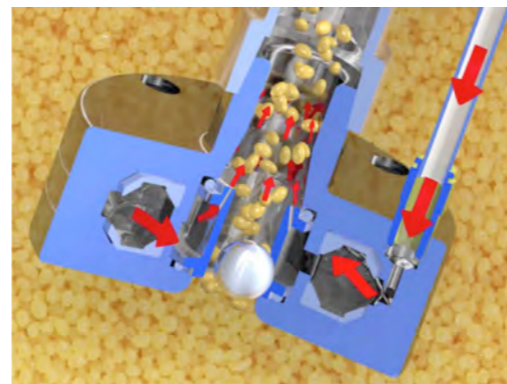
4 *Fully enclosed hopper*

Keeps adhesive free of debris and contaminants

5 *Simple installation*

Push to connect air line from InvisiPac system

Quick disconnect vacuum hose

This is the reduction in pressure that results when pellets flows through a constricted section of a pipe, and their velocity must increase as it passes through a constriction in accordance with the principle of mass continuity.

*Our feed system employs the Venturi effect**

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Maintain consistent temperature

Superior heated hose design

Graco's char-resistant hose is designed to reduce adhesive char buildup, resulting in more uptime and lower maintenance costs. An additional silicone layer promotes even heating, eliminating hot and cold spots that cause char and skin formation

- Available in many lengths for easy installation
- Available in waterwash or standard platforms
- InvisiPac waterwash hoses for food-safe packaging operations are Rated to IPX6, an international standard for performance in waterwash applications

① *Built in over-temperature safety interlock*

② *Silicone insulating layer*

③ *Up to temperature in less than 10 minutes*

Hassle-free operation

Eliminate downtime due to plugged nozzles.

With the InvisiPac Plug-Free™ Hot Melt Adhesive Applicators, you'll experience a new era in hassle-free operation. With their innovative free-flow manifold design and integrated module filtering – you can eliminate nozzle plugs.

Solenoid

- Graco-engineered for optimal control
- Designed to withstand high speed, high temperature operation
- Lasts over 5 times longer than the leading competitor

Configurable

- Design options easlily configures to meet application needs
- Can hook up to any existing hot melt systems for better control
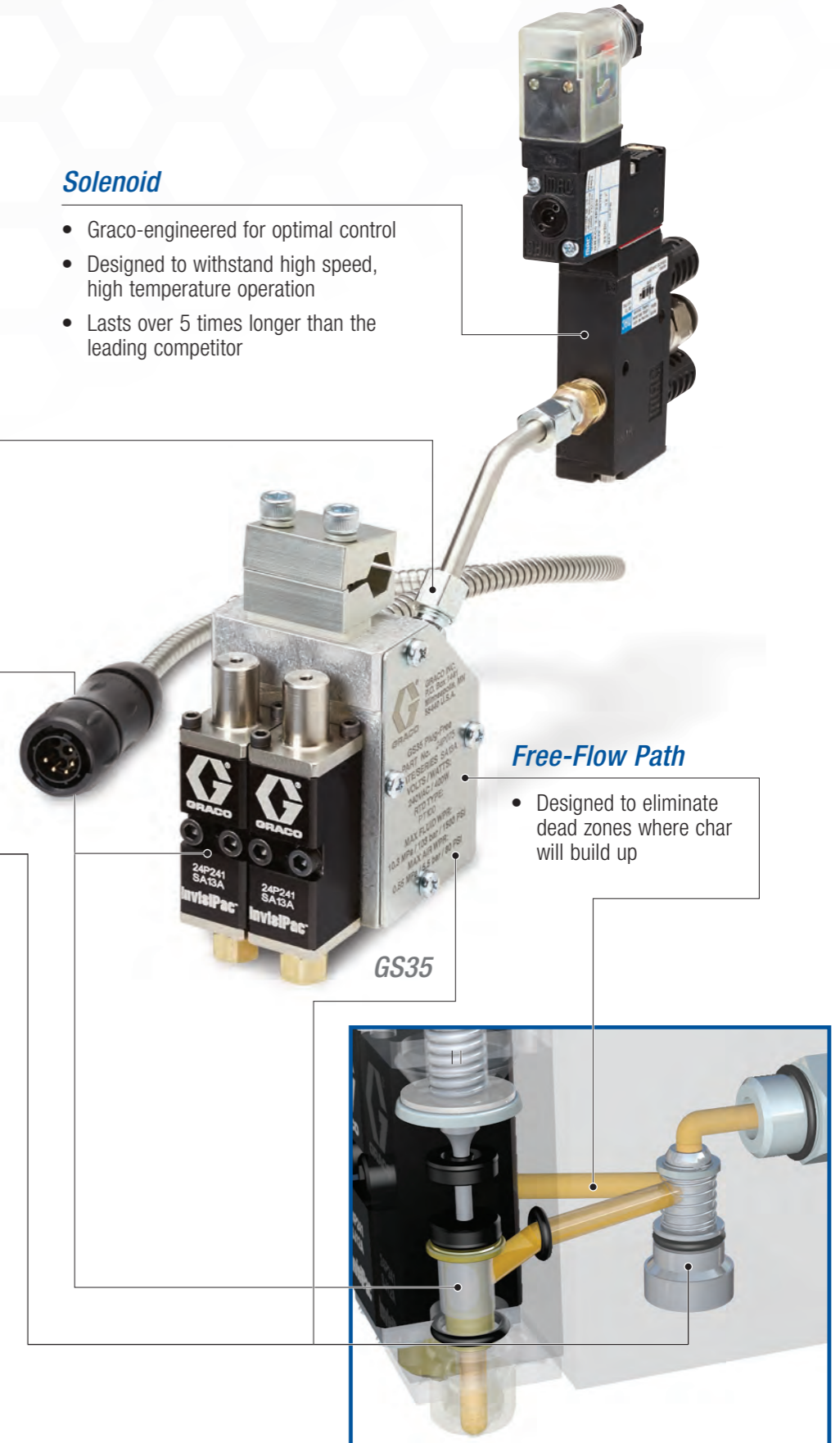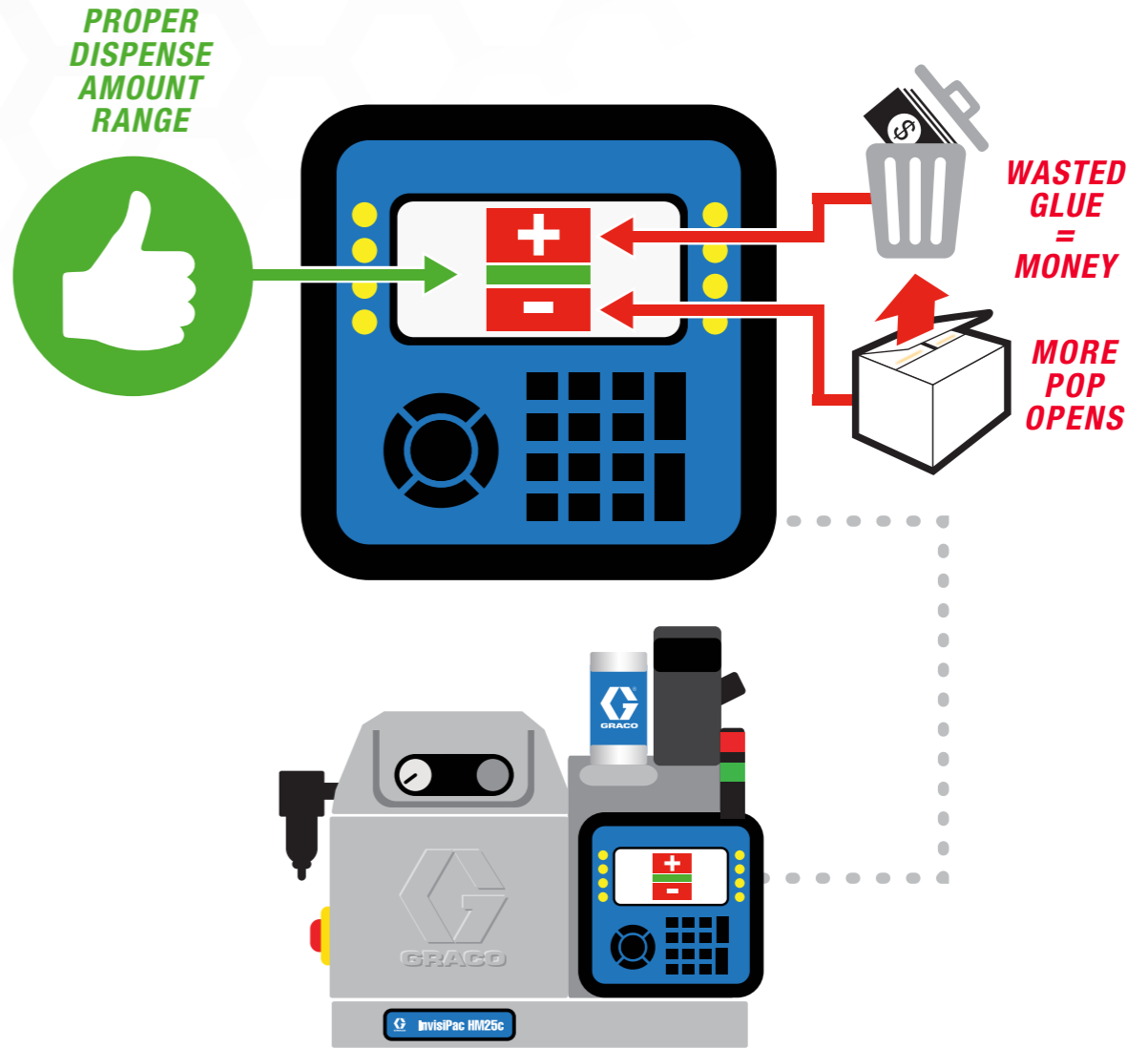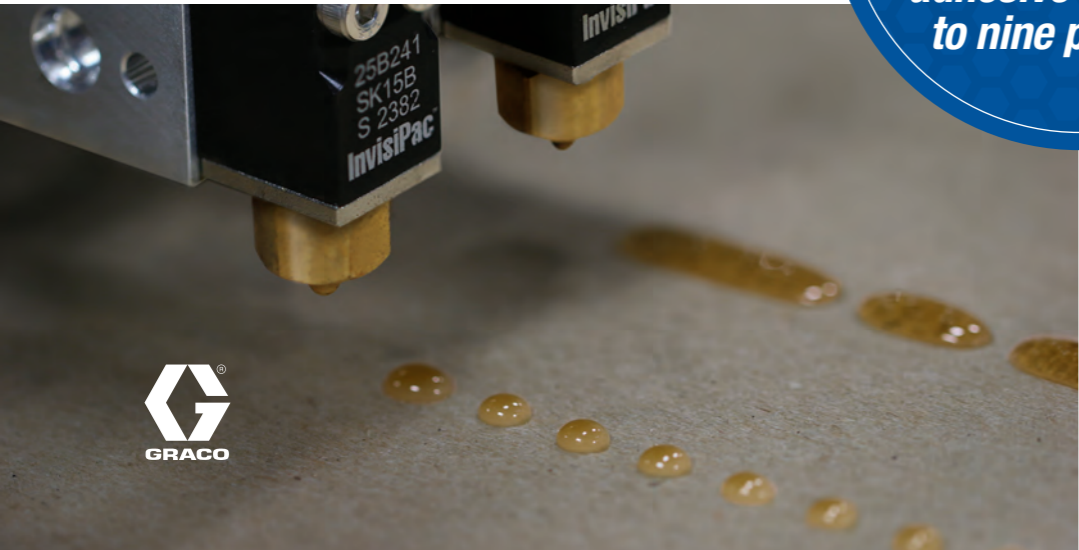
Module Filter

- Design protects ball and seat from debris and char
- Eliminates nozzle plugging when used with InvisiPac System

Manifold

- Manifold filter traps debris and char so it's removed when you replace the filter
- Manifold filter is included in a heated zone, eliminating cold spots and ensuring consistent adhesive application
- Reaches operating temperature in less than 10 minutes

Free-Flow Path

- Designed to eliminate dead zones where char will build up

GS35

GM100

Drive efficiencies with data

With InvisiPac, you can track material usage and other production events

- USB download of operating data, errors and event history

- Easily graph your adhesive consumption to track cost per unit, saving you money and ensuring quality

- Quantitatively analyze machine performance to improve preventative maintenance and reduce downtime

- Receive alerts when material usage is out of desired range and performance notifications on your lines.

PROPER DISPENSE AMOUNT RANGE

WASTED GLUE = MONEY

MORE POP OPENS

"In the first 90 days, we've had zero errors and have gone from using 30 pounds of adhesive each day to nine pounds."

— PLANT MANAGER, WORLDWIDE MEAT PROCESSOR

InvisiPac HM25c

Result:

- **Less** adhesive usage
- **Less** rework
- **Less** product returns due to pop-opens
- Equals **more** to your bottom line

InvisiPac Pattern Control System

Increase productivity

Fast setup, easy programming, pattern storage – it all adds up to increased productivity with the flexibility to adapt when you need to.

Easy pattern setup

- See pattern definitions all on one page for a comprehensive view
- Eliminate the guesswork of pattern setup with on-screen pattern preview
- Copy, delete or name patterns so you can change quickly and keep your line running
- Clone one gun sequence to another when all you need is to repeat the job
- Save time by inserting or deleting beads without editing the rest of the pattern

Variable line speed compensation

- Match adhesive output with line speed – put down less at slow speeds and more at high speeds – the right amount when and where you want it

Stitching

- Save on adhesive consumption by changing solid beads to stitched beads
- Easily stitch individual beads or the entire pattern
- Turn stitching on or off with the push of a button
- Document the savings by integrating with your InvisiPac Hot Melt Delivery System

Operating modes

- Time-based – for those cases where all you need is simple pattern control
- Distance-based at a fixed line speed or with an encoder – for when you need precise control or when you want to adjust to changing line speeds
- Not sure? Switch between modes without changing the program!
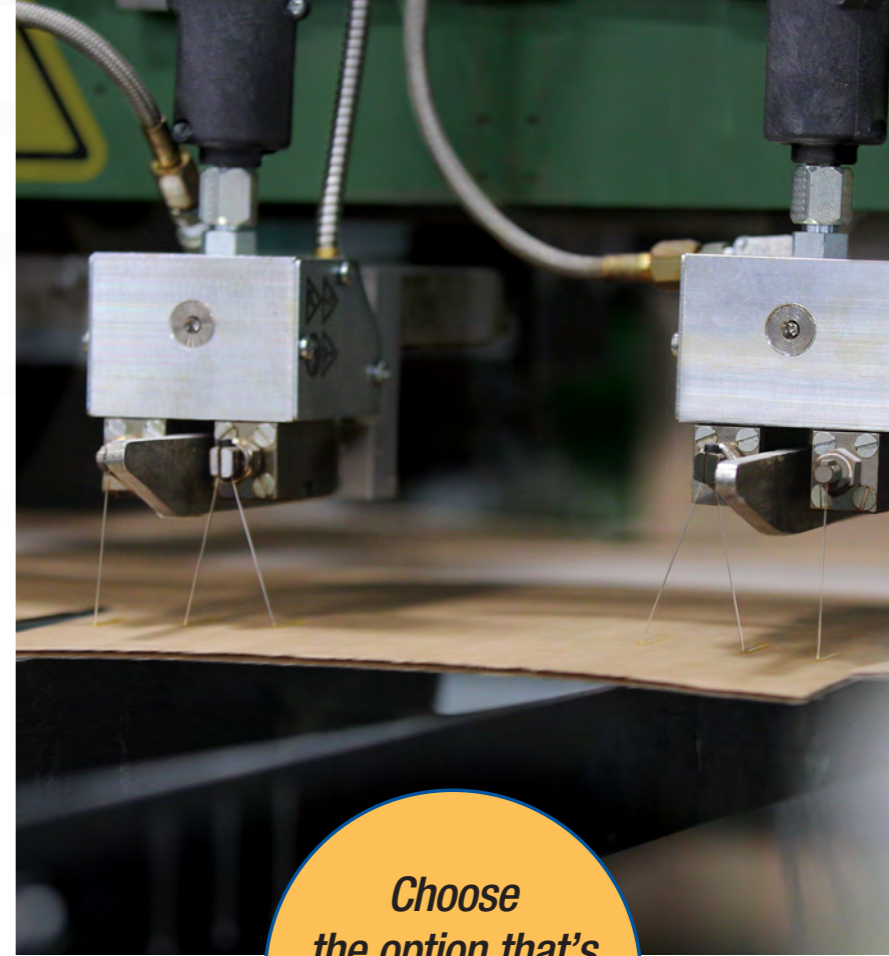
Fast. Easy. Productive.

The smart solution

The data to make real-time decisions – wherever you are.

With LineSite, you can track InvisiPac machines on the plant floor in real-time from your smart phone, tablet or computer, and use the data as a powerful business tool to cut costs.

Are your lines running? Could they be more efficient?
How much hot melt is being used in one hour? One day? One week?
Should you be considering simple preventative maintenance?

Choose the option that's right for your business.

Machines on Plant Floor

Control portal access through your local network

Access portal through a stand alone PC

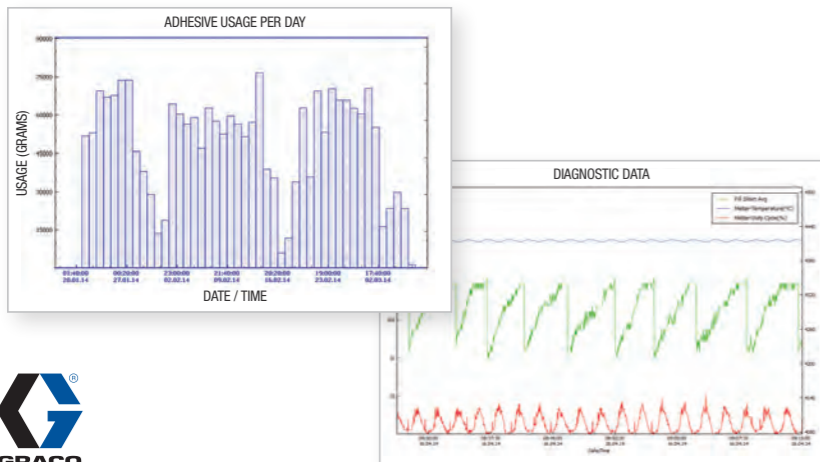*Allow controlled access for Technical Support*

Graco Linesite™ Remote Monitoring

Stay in the know

LineSite puts critical information at your fingertips.

- Check temperatures and review critical performance metrics
- Receive email alerts for system events or alarms
- See how much adhesive each line is using
- Monitor machine diagnostics and prevent issues from causing you downtime
- Respond instantaneously to potential faults and diagnose them remotely
- Review system operating data in an intuitive, graphical format

Log in to your individualized portal for the tools to keep your line running and the flexibility to make the choice that's right for your business.
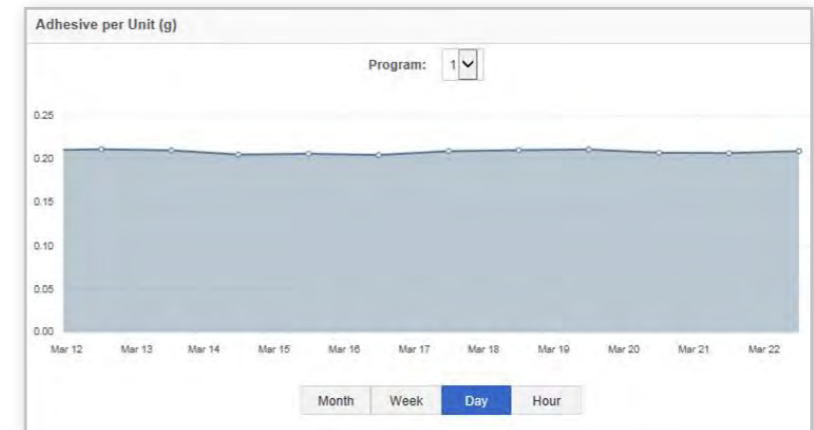
Knowledge at fingertips. ▶

- Know what your lines are doing.
- Track what lines are active.
- View daily productivity.

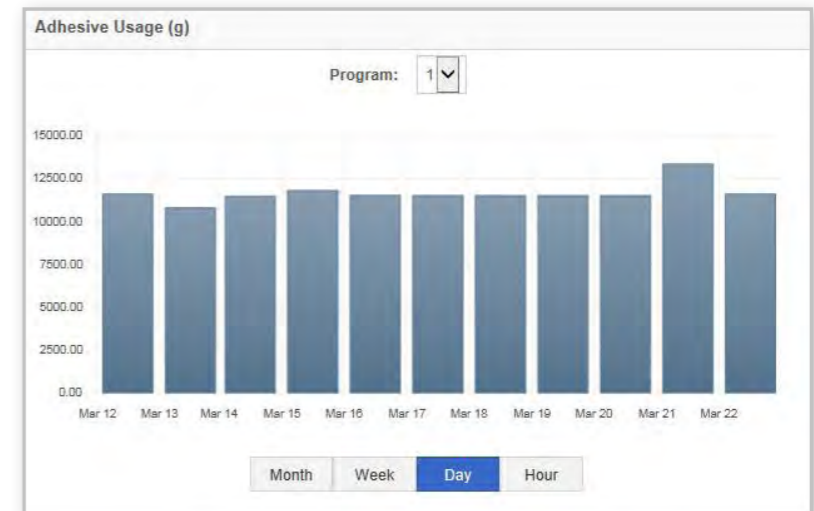**Adhesive Usage Dashboard**

Peace of mind. ▶

- Know you are applying the right amount of adhesive per package.
- Receive e-mail notifications when any system change occurs.

Adhesive Per Box Report

Save money. ▶

- Monitor adhesive usage and consumption over time to spot trends.
- Diagnose potential issues faster ultimately improving efficiency of your packaging line.

Total Adhesive Usage

InvisiPac

Specifications

InvisiPac Feeder System

Material size	1/2" x 1/2" x 1/4" (12mm x 12mm x 6mm)
Maximum Feed Distance	30 ft
Vertical Height	10 ft
Vacuum Transfer Operating Pressure Range	40-100 psi
Vacuum Air Consumption	9.5 scfm@40 psi 17.2 scfm @80 psi (4% duty cycle)

InvisiPac Hoses

Length	4 – 25 ft (in 2 foot increments)
Maximum Operating Temperature	204°C (400°F)
Maximum Working Fluid Pressure	1500 psi / 103 bar / 10.3 MPa
Time to Temperature	Less than 10 minutes* *
Available for dry or wash-down environments	
Built in over-temperature safety interlock	

InvisiPac GM100 Plug-Free Hot Melt Adhesive Applicator

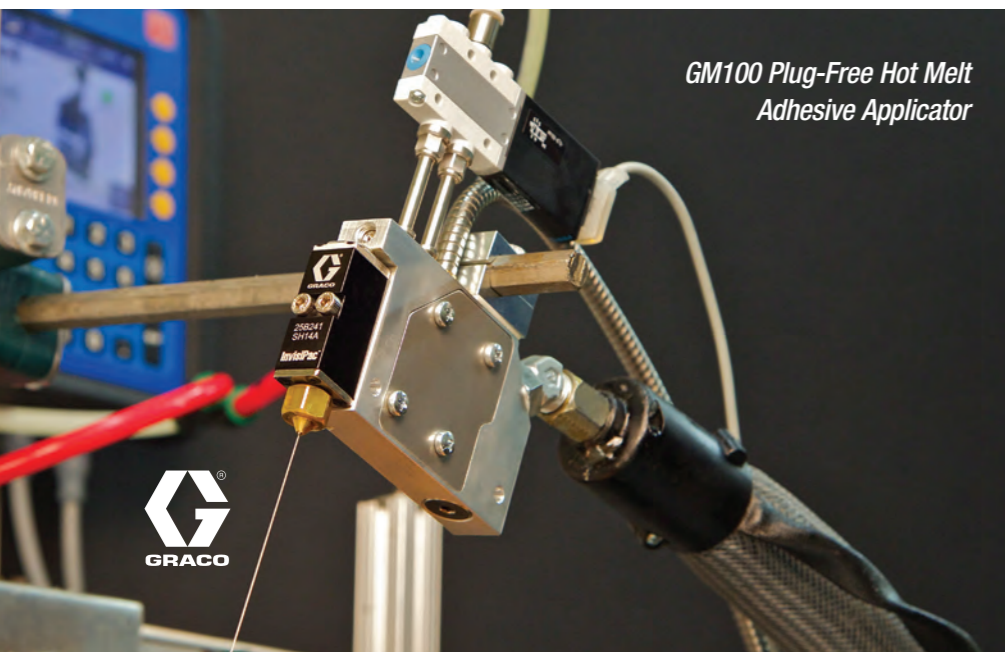|	
Description	Air Open / Air Closed, Ball and Seat
Speed	10,000 cycles/min
Time to Temperature	Less than 10 minutes* *
Maximum Working Fluid Pressure	1500 psi / 103 bar / 10.3 MPa
Operating Pneumatic Pressure Range	40-80 psi / 2.8-5.5 bar / 0.28-0.55 MPa
Maximum Operating Temperature	204°C (400°F)
Ambient Temperature Range	0-50°C (32-122°F)
Solenoid Valve	24 Vac
Graco engineered, factory installed	
Electrical Service	200-240 Vac, 50/60 Hz, 400 W
Approvals and Standards	UL499, CSA88, CE, ISO 9001

InvisiPac GS35 Plug-Free Hot Melt Adhesive Applicator

Description	Air Open / Spring Close, Ball and Seat
Speed	Greater than 3,500 cycles/min
Time to Temperature	Less than 10 minutes* *
Maximum Working Fluid Pressure	1500 psi / 103 bar / 10.3 MPa
Operating Pneumatic Pressure Range	40-80 psi / 2.8-5.5 bar / 0.28-0.55 MPa
Maximum Operating Temperature	204°C (400°F)
Ambient Temperature Range	0-50°C (32-122°F)
Solenoid Valve	24 Vac or 110 Vac
Graco engineered, factory installed	
Electrical Service	200-240 Vac, 50/60 Hz, 400 W
Approvals and Standards	UL499, CSA88, CE, ISO 9001

** From 21°C to 177°C (70°F to 350°F), dependent upon power supply, machine configuration and glue type. For detailed dimensions and configurations, see instruction manuals 3A2347, 333347 and 3A2805 available on www.graco.com

GM100 Plug-Free Hot Melt Adhesive Applicator

InvisiPac Pattern Controller

Description	PC-8	PC-8e	Specifications
Gun Outputs	8	8	24VDC, 1A max
Trigger Inputs	4	4	NPN or PNP
Encoder	N/A	2	Differential Line Driver
Line Speed Compensation	N/A	2	I/P (4-20mA) or V/P (0-10V)
PLC Enable / Disable	✓	✓	0-30VDC
PLC Program Select Bits	4	4	Select up to 15 unique programs
PLC Alarm Output	✓	✓	0-250VAC (dry contact output)
Integrated Power Supply	✓	✓	150W, 24VDC
Program Storage	20	50	
Beads per Output	24	24	Each bead can be independently stitched
Distance Accuracy	1mm, 0.1"	1mm, 0.1"	
Time Accuracy	1ms	1ms	
Enclosure Environmental Rating	IP54	IP54	
Approvals	CE, ETL, cETL	CE, ETL, cETL	

GRACO®

Graco has you covered.

Unmatched Quality.

Our focus on continued innovation keeps Graco Fluid Automation at the forefront of fluid handling technology. We typically reinvest three times the industry average into research and development. Our mission is to provide customers with products that result in the **lowest total cost of ownership** while maximizing product quality and business success.

Global Presence.

With facilities located in Europe, Asia Pacific and the United States, Graco provides a personalized, **end-to-end partnership experience**. Our engineers will lead the solution planning, testing and refining of your solution in our regional labs to ultimately overseeing the product installation process.

Global Support.

After installation, **in-person support** will be available from our worldwide distribution network of trained and certified distributors who offer relevant experience, product knowledge and responsive service.

There is no better reassurance than Graco technology, product innovation and the people committed to helping you succeed all day, every day.

Contact us today!

Call **800-746-1334** to speak with a Graco representative, visit **www.graco.com/invisipac** for more information.

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TANK-FREE™ HOT MELT DELIVERY SYSTEM

InvisiPac HM25c

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