



Case and Carton Packaging

PROVEN QUALITY. LEADING TECHNOLOGY.

InvisiPac®

TANK-FREE™ HOT MELT DELIVERY SYSTEM



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



InvisiPac®



**Unplanned
downtime**



Pop-opens



**Clogged
nozzles**



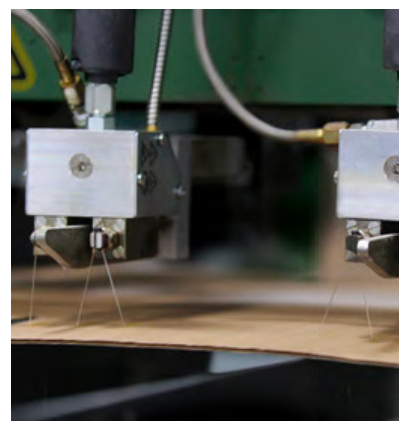
**Increasing
adhesive costs**

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.

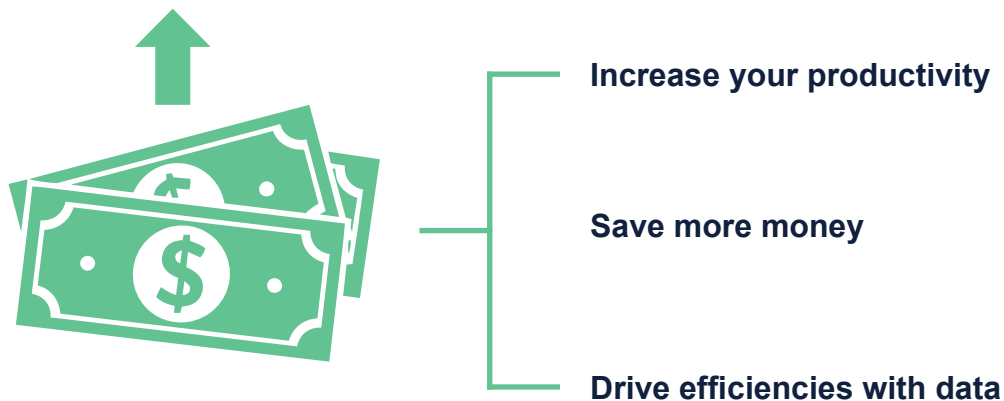


Keep your lines running + drive more profitability

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.

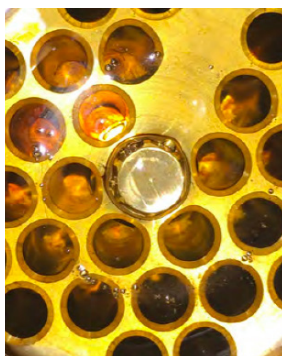


Why InvisiPac is different ...and better

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:

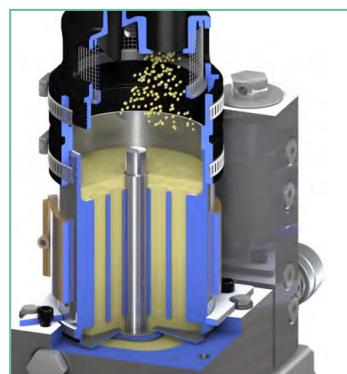
1. An ultrasonic sensor monitors glue in the melting chamber automatically adding glue.
2. With its efficient heat transfer design, glue melts quickly and maintains a consistent temperature.
3. Less time your glue cooks at high temperature means less char, less maintenance, less degradation and more uptime.



More choices

You can use low-grade adhesives when it makes sense or high-grade adhesives to ensure premium performance.

1.



2.



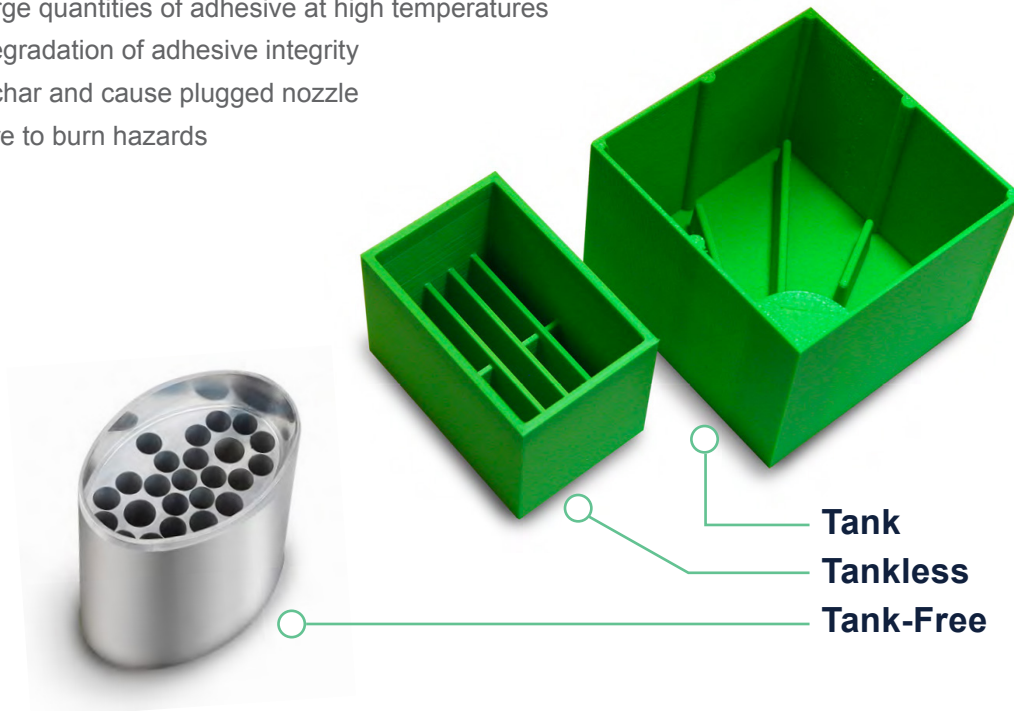
3.



The Tank-Free™ difference

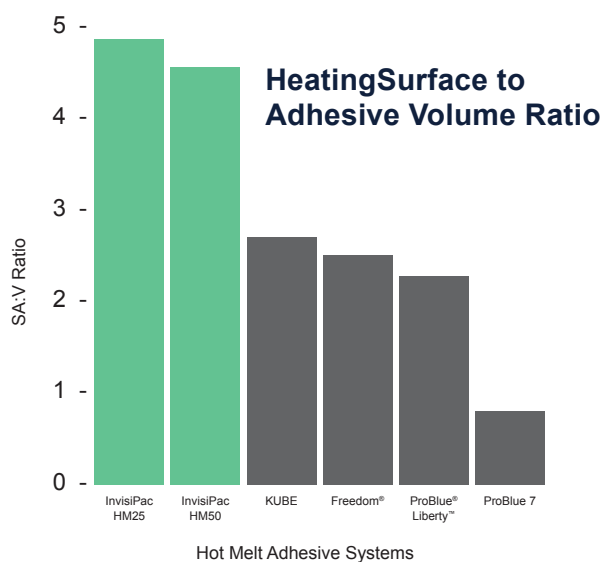
Tank & Tank-Less Systems

- 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



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



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.

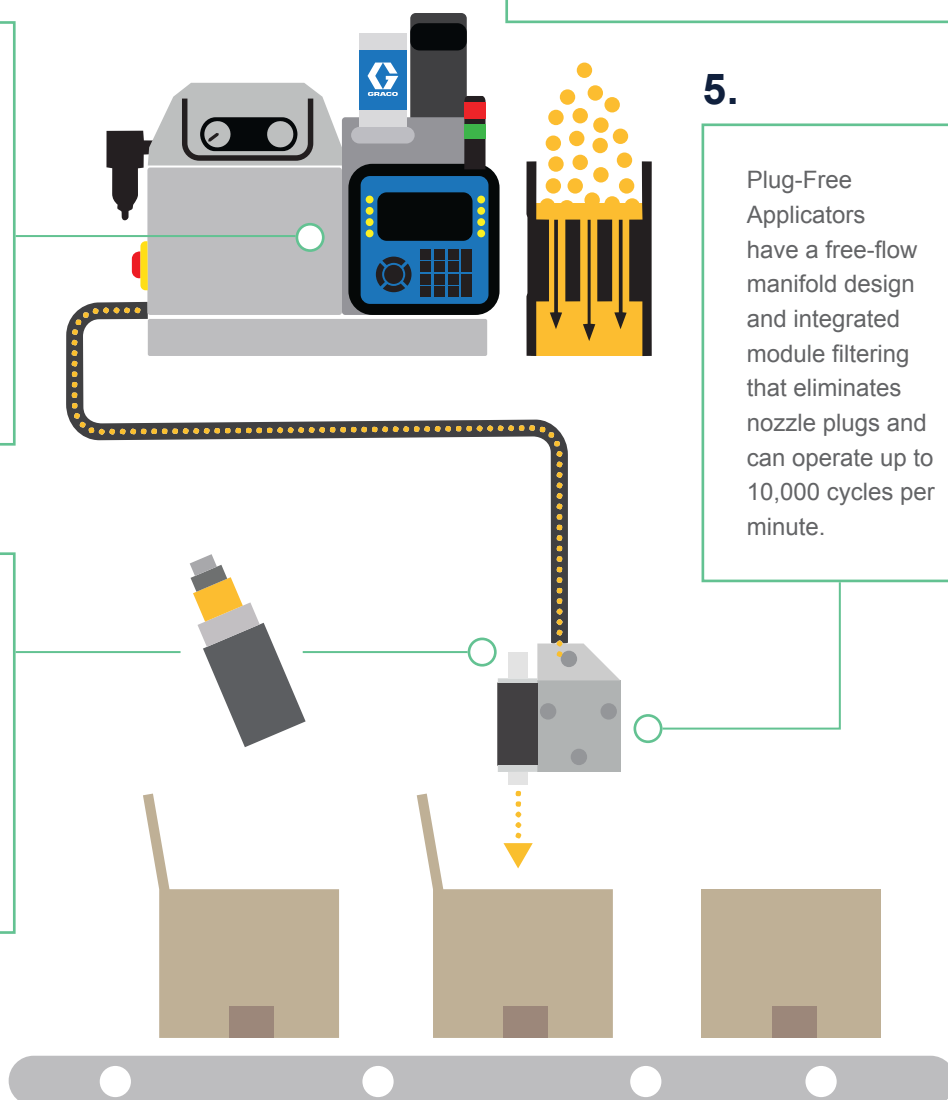
Advanced Display Module provides an accurate control of the complete process (temperature, adhesive usage, dispense shot sizes, performance notifications).

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.



The clear choice

Increase your productivity

Eliminate Downtime

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

Improved Operator Safety

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

Parts Last Longer

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

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

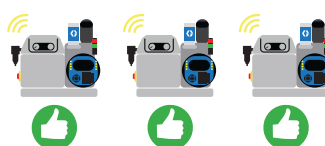
Know Your Glue Usage

- 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.

Get real time feedback

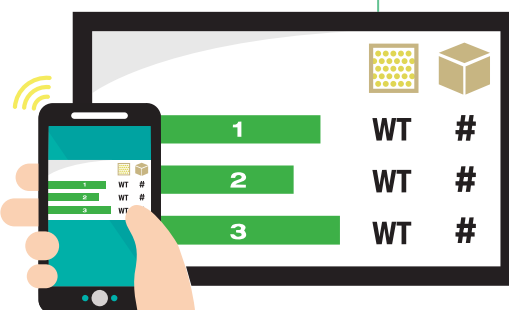


PROPER DISPENSE
AMOUNT RANGE



MORE
POP OPENS

WASTED
GLUE + MONEY



HM25C: Compact reliability, significant profitability

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

InvisiPac HM25C



Integrated Vacuum Feed - 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

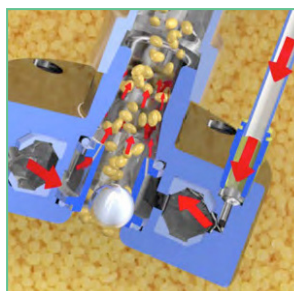
Breaks up clumps and reduces adhesive bridging

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*

Heated Hose - 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



Plug-Free Applicators - 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.

- 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



GM100

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

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 easily configures to meet application needs
- Can hook up to any existing hot melt systems for better control

Free-Flow Path

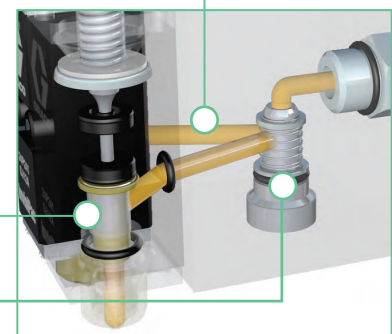
- Designed to eliminate dead zones where char will build up



GS35

Module Filter

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



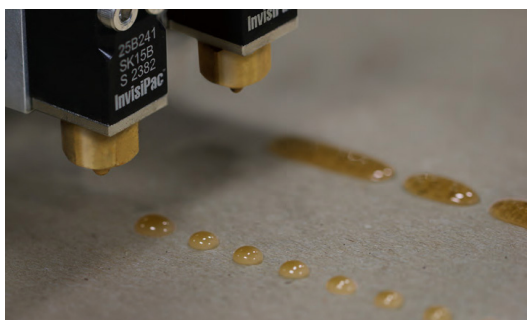
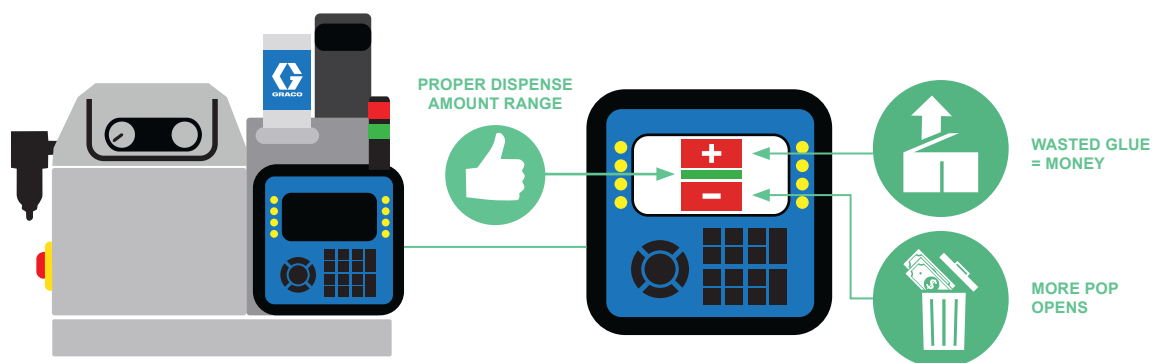
Material Tracking - Drive efficiencies with data

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.

— Plan Manager
Worldwide Meat
Processor

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



Result:

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

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.

“50% glue savings
is awesome and
programming patterns
is unbelievably
easy.”

— North American
Kitted Cabinet
Manufacturer

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!

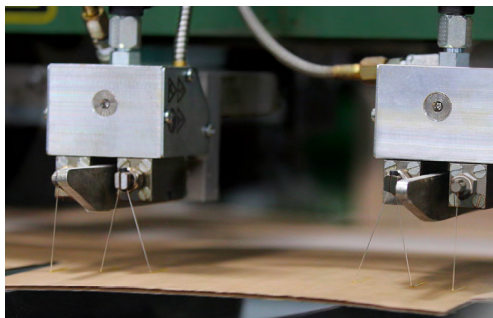
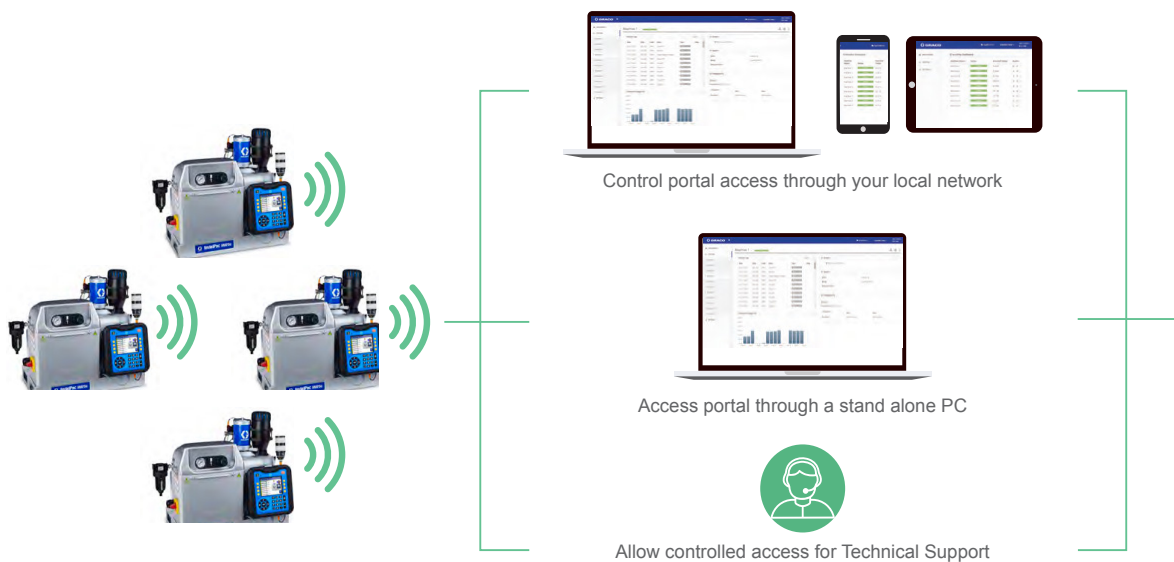


Graco Linesite™ - Remote Monitoring The smart solution

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.**

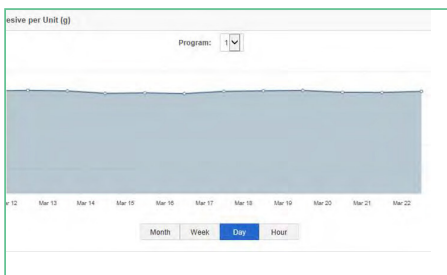
Graco Linesite™ Remote Monitoring - Stay in the know

LineSite puts critical information at your fingertips.

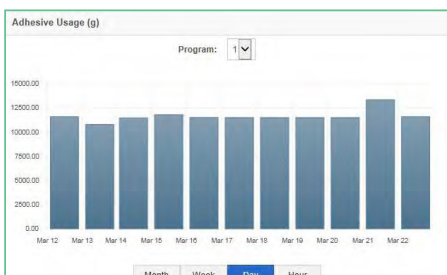
- Check temperatures and review critical performance metrics
- Receive email alerts for system events or alarms
- See how much adhesive each line is using
- Monitor machine diagnostics and prevent issues from causing you downtime
- Respond instantaneously to potential faults and diagnose them remotely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

InvisiPac Dashboard				
		Factory View	Generate Reports	
Machine Name	Status	Adhesive Today	Units Today	Events
Line 604	Inactive	2.27 lb	2304	
Line 608	Active	13.68 lb	14242	
Line 610	Active	4.73 lb	6078	
Line 615	Active	0.11 lb	73	
Line 686	Active	6.25 lb	81173	
Line 687	Active	8.88 lb	106679	
Line 688	Active	2.92 lb	34086	

Adhesive Usage Dashboard



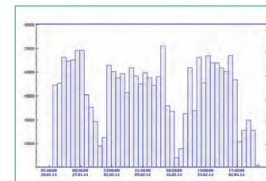
Adhesive Per Box Report



Total Adhesive Usage

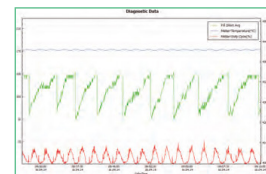
Knowledge at fingertips

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



Peace of mind

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



Save money

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

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.

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

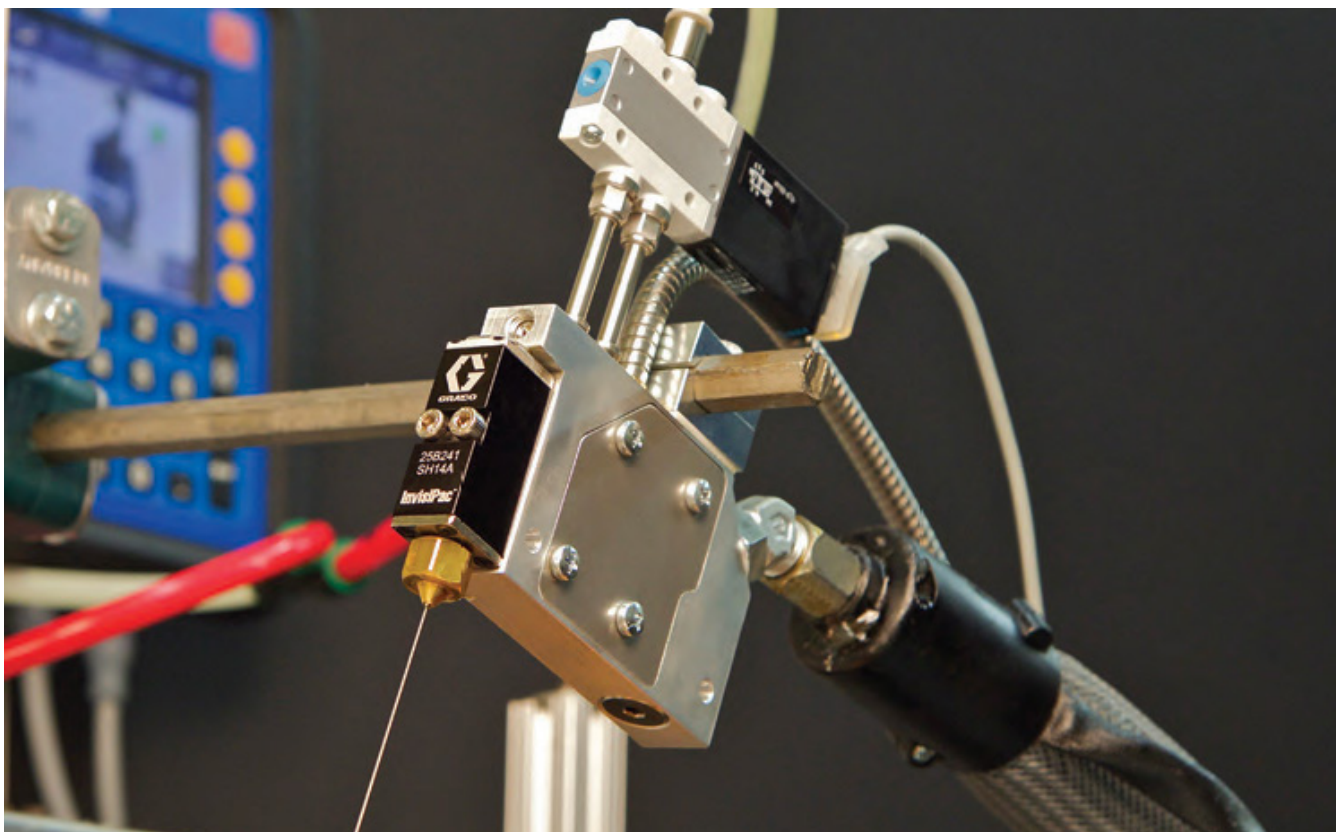
Length:	4 – 25 ft (in 2 foot increments)
Maximum Operating Temperature:	204°C (400°F)
Maximum Working Fluid Pressure:	1500 psi / 103 bar / 10.3 MPa
Time to Temperature Less than:	10 minutes* *

Available for dry or wash-down environments

Built in over-temperature safety interlock



GM100 Plug-Free Hot Melt
Adhesive Applicator



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
<i>Graco engineered, factory installed</i>	
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
<i>Graco engineered, factory installed</i>	
Electrical Service:	200-240 Vac, 50/60 Hz, 400 W
Approvals and Standards:	UL499, CSA88, CE, ISO 9001



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 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

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

ASIA PACIFIC**AUSTRALIA**

Graco Australia Pty Ltd.
Suite 17, 2 Enterprise Drive
Bundoora, Victoria 3083
Australia
Tel: 61 3 9468 8500
Fax: 61 3 9468 8599

CHINA

Graco Fluid Equipment (Shanghai)
Co. Ltd., Building 7, No.1-2,
Wenshui Road 299,
Jing'an District
Shanghai, 200436
The People's Republic of China
Tel: 86 21 649 50088
Fax: 86 21 649 50077

INDIA

Graco India Pvt Ltd.
Plot No. 295
Udyog Vihar Phase IV
Gurgugram, Haryana, India 122015
Tel: 91 124 6610200
Fax: 91 124 6610201

JAPAN

Graco K.K.
1-27-12 Hayabuchi
Tsuzuki-ku
Yokohama City, Japan 2240025
Tel: 81 45 593 7300
Fax: 81 45 593 7301

KOREA

Graco Korea Inc.
Shinhan Bank Building
4th Floor #1599
Gwangyang-Dong, Dongan-Ku,
Anyang-si, Korea 431-060
Tel: 82 31 476 9400
Fax: 82 31 476 9801

AMERICAS**MINNESOTA**

Worldwide Headquarters
Graco Inc.
88-11th Avenue N.E.
Minneapolis, MN 55413

MAILING ADDRESS

P.O. Box 1441
Minneapolis, MN 55440-1441

OHIO

8400 Port Jackson Ave NW,
North Canton, OH 44720

EUROPE**BELGIUM**

Graco BVBA
Industrieterrein-Oude
Bunders Slakweidestraat 31
B-3630 Maasmechelen,
Belgium
Tel: 32 89 770 700
Fax: 32 89 770 777

InvisiPac®
TANK-FREE™ HOT MELT DELIVERY SYSTEM



At E.S.I Solutions, we are committed to providing unparalleled service and quality to help your business thrive.

Reach out to discover how we can support your operational needs.



M O V I N G M A T E R I A L S T H A T M A T T E R



S O L U T I O N S

Connect with Us

Contact Information

General Information

Office: +27 18 632 2027
Sales3@ESIsolutions.co.za

