



HFR Metering System

Hydraulic Fixed Ratio Metering System



PROVEN QUALITY. LEADING TECHNOLOGY.

It's All About Control

High-performance precision metering

The rules have changed

The versatility of the Graco HFR Metering System™ promises to re-define the marketplace. That's because this hydraulic, fixed ratio metering system processes multiple materials – from rigid and flexible polyurethanes to elastomers and epoxies. And its modular design, combined with Graco technologies and precision dispensing capabilities give you a system that is advanced and reliable, yet affordable.

Accurate, on-ratio dispense means less waste, more profits

With the Graco HFR Metering System, you accurately hit a specific ratio and volume – first time, every time. As the machine dispenses material, it automatically fine-tunes and adjusts to achieve a consistent material flow or pressure. With a $\pm 1\%$ ratio accuracy, you reduce scrap and rework with accurate, on-ratio dispensing.

More technology for less capital investment

The Graco HFR Metering System is a high-quality meter, mix and dispense system that offers more technology and functionality – at a lower price than traditional custom RIM systems. A low initial investment allows you to participate in the marketplace where it may not have been possible before.

You benefit from a lower total cost of ownership

The system's horizontal pumps can be rebuilt at your facility, eliminating costly rebuilds and the need for backup pumps. Less downtime, reduced maintenance costs, and lower parts inventory mean more profits for your company.

Materials

Handles multiple materials including:

- Polyurethane foams
- Polyurethane elastomers
- Polyureas

Applications

- Polyurethane processing
- Coating



Graco HFR Metering System

Fully configurable – simply select what you need for your material and application

Modular design gives you exactly what you need

A modular design gives you the freedom and flexibility to configure the components that are essential for your specific application requirements – no more, no less. Standard configured equipment can be delivered to your door much faster than a custom solution. Plus it's easier to use and service than custom equipment because you use standard parts. And with Graco's established global distribution network, service is there when you need it.

Advanced Display Module

- Provides easy setup, monitoring and system diagnostics
- USB drive for data reporting
- Stores 100 shot sizes and five sequences of 20 positions each

IsoGuard Select™ System

- Prevents isocyanate crystallization – less maintenance, more uptime

Servo Control

- In constant communication with the Advanced Display Module, the Motor Control Module makes real-time adjustments to deliver a highly precise dispense

Power Distribution Box

- Modular assembly replaces complex wiring

Graco Z-Series Horizontal Pumps

- Provide precision control to eliminate pressure spikes
- Positive displacement pumps are easy to service with easy-to-replace cartridge packings, seals and pumps seats

Compact Design

- Small footprint saves valuable space in your plant
- 48W x 34D x 59H in (122 x 150 x 86 cm)

Fully Configurable

- Select what you need for your material and application – no more, no less
- Shorter lead time than custom solutions
- Standard wear parts are quickly available



Technology that Boosts Productivity

Easy set-up, material monitoring capabilities and advanced dispensing technology

Intuitive, easy to use controls

The Graco HFR Metering System features intuitive user interfaces based on the Graco Control Architecture™, a modular system of processing and control components. Products using Graco Control Architecture provide similar interface functionality across your plant and simplify training. Maintenance and service is easier too, thanks to built-in troubleshooting tools and simple, modular part replacement.

The Advanced Display Module is easy to understand and operate. Because it's easy to use, you spend less time on training and reduce operator error as well. The Advanced Display Module provides:

- Programmable shot sizes and sequencing – up to 100 different shot sizes and five sequences of 20 positions each
- Easy configuration of integrated temperature controls
- Immediate access to error/event history
- Material usage and pump cycle counter
- Simple interface for machine calibration

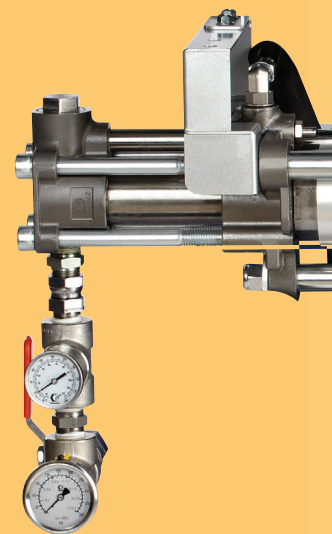


Integrated USB interface for easy data downloads

- Lets you download process data and error/event logs onto a flash drive for further analysis
- Allows you to archive valuable setup parameters

Improved process performance

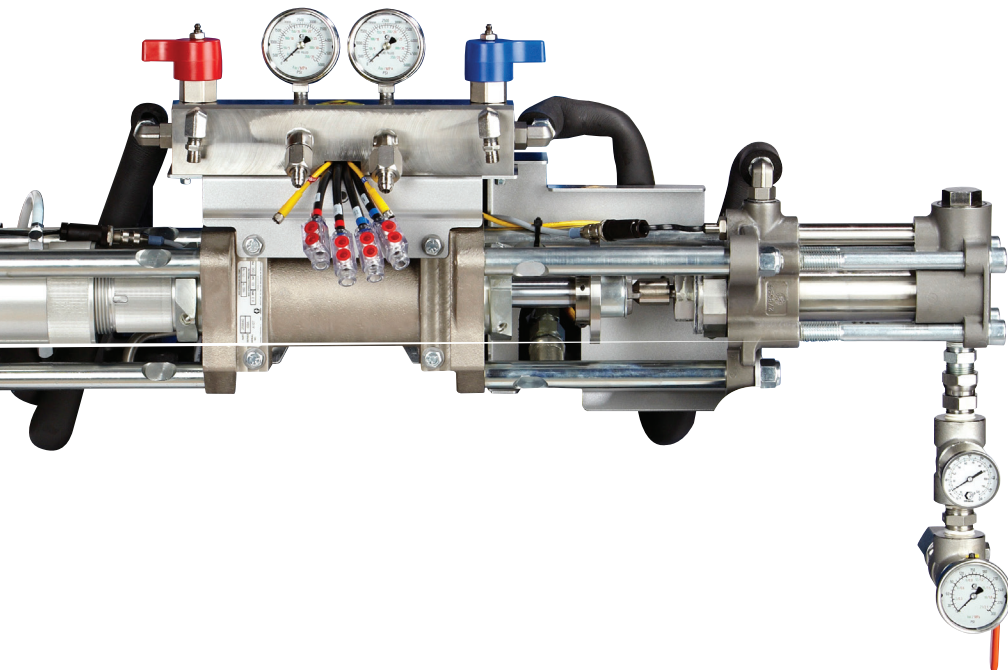
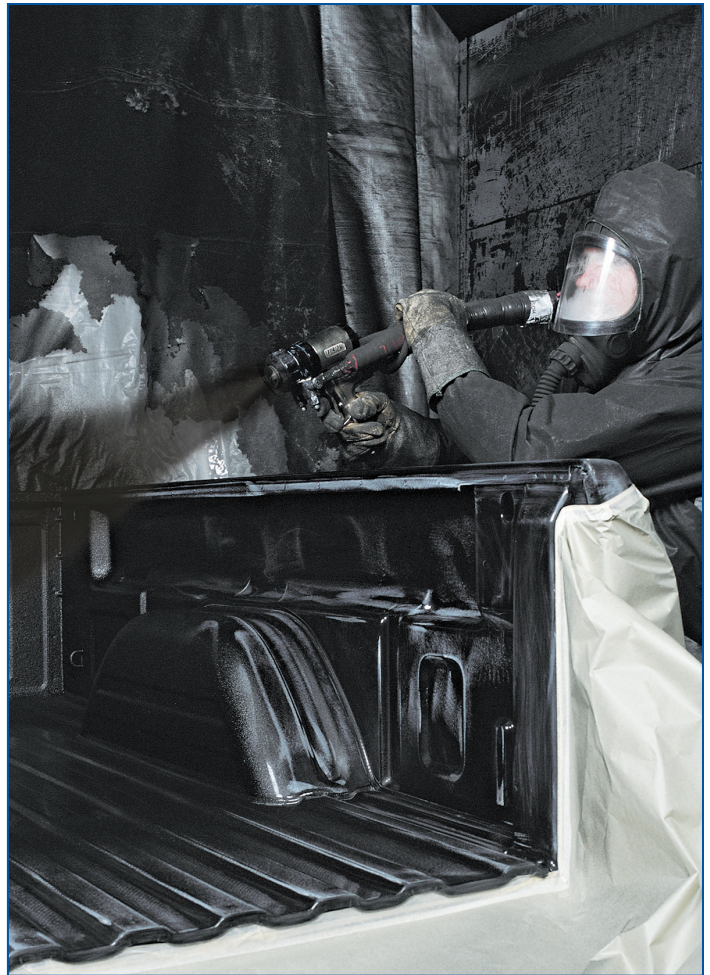
Material dispensing reaches a new level of precision due to proprietary algorithms and adaptive technology. The Graco Metering System uses advanced controls to monitor the system and control the dispensing and material conditioning processes. The system is capable of producing either a constant pressure material output or a constant flow rate material output.



Graco Z-Series Horizontal Pumps

Proven piston pump technology

- Provide precision control to eliminate pressure spikes
- Positive displacement pumps are easy to service with easy-to-replace cartridge packings, seals and pumps seats
- “Real” positive displacement pump
- Elastomeric seals and positive ball checks
- Wide variety of materials
 - Fillers, high viscosity, abrasive fluids
- Supported worldwide by Graco distribution
 - Easy service and repair
- Flow control – linear encoder – linear sensor accurate with in .1 mm
- Close loop control on pressure and flow



Applicators

High-Performance Applicators for Polyurethane Processing

EP Pour Gun

- For open pour applications and closed-mold injection
- Handles filled and unfilled polyurethanes
- Offers both manual and automated application modes
- Mechanically self-cleaning - eliminates costly solvent flushing
- Easy, do-it-yourself mixhead rebuilds save money
- Flow rates: 1 to 50 lb/min (0.45 to 22.7 kg/min)

L-Style Mixing Head

- For open pour applications requiring laminar flow – low-exit velocity reduces splatter in open mold or substrate
- Handles rigid or flexible urethanes
- Elastomer seals on mix piston eliminates need to “foam” in head to create seal; no crossover on startup
- Fixed or adjustable orifices
- Mechanically self-cleaning - eliminates costly solvent flushing
- Flow rates: 4.6 to 234 lb/min (2 to 106 kg/min)

S-Style Mixing Head

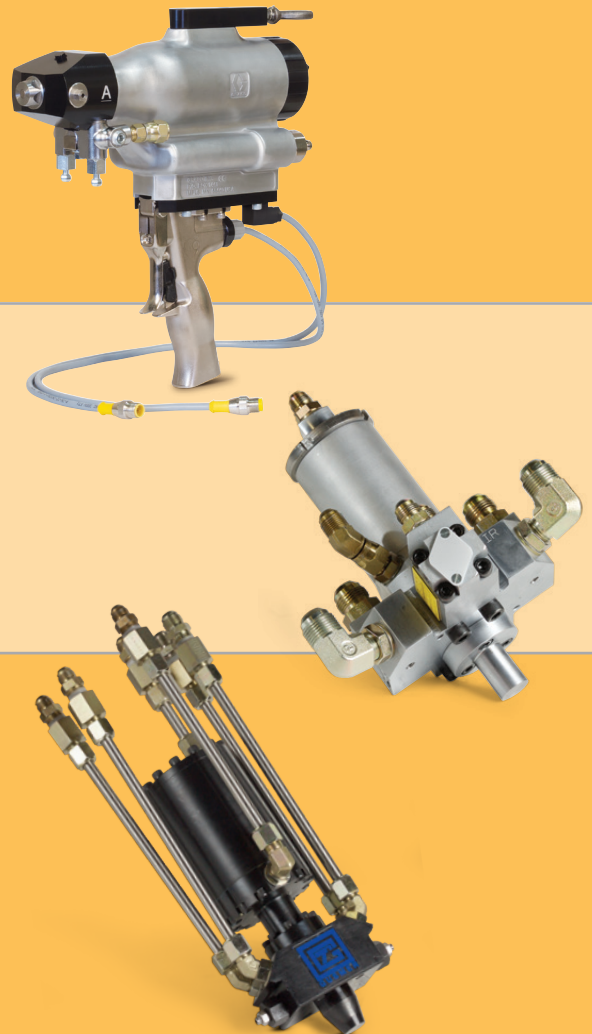
- For closed mold applications
- High velocity exit allows mixture stream to fill closed molds, minimizing use of multiple heads to fill molds
- Handles rigid or flexible urethanes
- Available in a range of mixing chamber diameters to accommodate various output requirements
- Elastomer seals on mix piston eliminates need to “foam” in head to create seal
- Mechanically self-cleaning - eliminates costly solvent flushing
- Flow rates: 12 to 360 lb/min (5.4 to 163 kg/min)

Fusion® AP Gun

- For high output spray polyurethane foam applications
- Easy air-blast tip cleaning reduces build-up and tip clogging
- Long-lasting side seals means less downtime for maintenance
- Quick-release fluid housing - lets you easily change the mix chambers without tools
- Hand-tightened front cap – no tools needed to clean and maintain seals and mix chamber
- Max output: 50 lb/min (22.7 kg/min)

Probler® P2 Gun

- For high output spray polyurethane foam applications
- Easy daily maintenance
- Responsive trigger action
- Easy-to-replace mix chamber insert
- Anti-crossover design virtually eliminates possibility of material entering the air piston
- Max output: 40 lb/min (18 kg/min)



Technical Specifications

Everything you need to make an informed decision

Graco HFR Metering System

Dimensions	48W x 59H x 34D in (122 x 150 x 86 cm)
Mix ratio range	Fixed ratio, 1:1 to 16:1, shot to continuous flow
Ratio tolerance range	Up to $\pm 1\%$
Fluid filtration	20 mesh standard
Flow rates	
Minimum	0.12 gpm (7.5 cc/s)
Maximum	5.0 gpm (316 cc/s)
Fluid inlets without feed kits	3/4 npt
Max. mixed fluid working pressure	3000 psi (207 bar, 20.7 MPa)
Min. pump inlet fluid pressure	50 psig (0.3 bar, 0.03 MPa)
Max. ambient temperature	120°F (49°C)
Weight	
Base machine	634 lb (287.6 kg)
Fully configured	868 lb (393.7 kg)
Fluid viscosity range	up to 30,000 cps
Wetted parts	
Pumps (A and B)	Stainless steel, PTFE, UHMWPE, tungsten carbide
Manifold	Aluminum or stainless steel
Applicator	Varies based on applicator chosen; see applicator manual
Primary heaters	Aluminum, carbon steel

Graco EP Pour Gun

Flow rates	1 lb/min (0.45 kg/min) up to 50 lb/min (22.7 kg/min)
Max. fluid working pressure	3000 psi (207 bar, 20.7 MPa)
Min. air inlet pressure	80 psi (5.5 bar, 0.55 MPa)
Max. air inlet pressure	100 psi (6.9 bar, 0.69 MPa)
Max. fluid temperature	180°F (82°C)
Air inlet size	1/4 npt quick disconnect nipple
A component inlet size	-5 JIC, 1/2 - 20 UNF
B component inlet size	-6 JIC, 9/16 - 18 UNF
Dimensions	
With handle	10.8L x 3.1W x 11.7H in (274 x 79 x 297 mm)
Without handle.....	10.8L x 3.1W x 6.1H in (274 x 79 x 155 mm)
Weight	
With handle	7.4 lb (3.4 kg)
Without handle.....	6.4 lb (2.9 kg)
Materials of construction	Aluminum, stainless steel, acetal, chemically-resistant o-rings, carbon steel, fluoroelastomer o-rings
Wetted parts	Aluminum, stainless steel, acetal, chemically-resistant o-rings
Manual	313872





ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

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 materials used in vehicle lubrication, commercial and industrial settings.

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

MAILING ADDRESS

P.O. Box 1441
Minneapolis, MN 55440-1441
Tel: 612-623-6000
Fax: 612-623-6777

AMERICAS

MINNESOTA

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

EUROPE

BELGIUM

European Headquarters
Graco N.V.
Industrieterrein-Oude Bunders
Slakweidestraat 31
3630 Maasmechelen,
Belgium
Tel: 32 89 770 700
Fax: 32 89 770 777

ASIA PACIFIC

AUSTRALIA

Graco Australia Pty Ltd.
Suite 17, 2 Enterprise Drive
Bundoora, Victoria 3083
Australia
Tel: 61 3 94688500
Fax: 61 3 94688599

CHINA

Graco Hong Kong Ltd.
Shanghai Representative Office
Room 118 1st Floor
No.2 Xin Yuan Building
No.509 Cao Bao Road
Shanghai, 200233
The People's Republic of China
Tel: 86 21 649 50088
Fax: 86 21 649 50077

INDIA

Graco Hong Kong Ltd.
India Liaison Office
Room 432, Augusta Point
Regus Business Centre 53
Golf Course Road
Gurgaon, Haryana
India 122001
Tel: 91 124 435 4208
Fax: 91 124 435 4001

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
Gwanyang-Dong, Dongan-Ku,
Anyang-si, Korea 431-060
Tel: 82 31 476 9400
Fax: 82 31 476 9801

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Graco Ohio Inc.
Customer Service
800-746-1334
Fax 330-966-3006