



Packaging Applications

Equipment Solutions for Flexible Packaging and Lamination



Reliable meter, mix and dispense equipment for accurate, on-ratio adhesive dispensing

- Provides assurance that adhesives are mixed properly and on-ratio
- System monitors pressures and shuts down the unit if off-ratio conditions exist
- Ratio assurance results in reduced scrap, higher yield, less material waste, and more process confidence
- Integrated USB interface lets you easily download process data onto a flash drive for further analysis

PROVEN QUALITY. LEADING TECHNOLOGY.

Advanced Plural-Component Dispensing for Flexible

On-ratio dispensing means peace of mind

The Graco HFR™ Metering System for flexible packaging laminating applications is designed for accurate, on-ratio dispensing. With the Graco HFR, you can reduce scrap and rework, thanks to the system's accuracy, repeatability and ratio monitoring. Ideal for low-to high-viscosity compounds, this hydraulic, fixed ratio metering system is advanced and reliable, yet affordable.

- Provides intermittent dosing actuated from nip sensor
- Provides on-ratio mixing with accuracies +/- 1%
- Handles higher viscosity products without heat
- Provides fixed ratio range 1:1 to 32:1
- Fixed ratio equipment can reduce operator tampering while in production
- Handles polyurethane materials

Ratio assurance saves material costs and downtime expense

Properly proportioned material means less scrap, less re-work, improved yield, increased production uptime, better overall productivity and more confidence in end results and quality. With an optional flow meter package and communication module, you have the assurance that your materials are applied on ratio. The flow meter package monitors actual ratios and detects off-ratio conditions. If off-ratio conditions occur, the laminator automatically shuts down. Communication protocol options to laminator include Discrete I/O, DeviceNet, Ethernet I/P, Profibus, and ProfiNet.

Applications

- Solvent-free lamination process: the Graco HFR supplies mixed material intermittently to a puddle between two smooth rollers on a laminator. This “dosing area” is where adhesive is applied to application rollers to bond films and foils together for flexible packaging.



Intuitive, easy to use user interface

The Graco HFR Metering Systems features intuitive user controls based on the Graco Control Architecture.™

Less training time

Products using Graco Control Architecture provide similar functionality across your plant – which results in less training time for you operators. In other words, if you learn one system, you are already familiar with the other.

Packaging and Lamination

Advanced Display Module

- Provides easy setup, monitoring and system diagnostics
- USB drive for data reporting

IsoGuard Select® System

- Prevents isocyanate crystallization – less maintenance, more uptime



Features

- Easy configuration of integrated temperature controls
- Immediate access to error/event history
- Material usage and pump cycle counter
- Simple interface for machine calibration



Motor Control Module

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

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



Optional flow meter package monitors the flow of "A" and "B" materials, detects out-of-ratio conditions and records data for further analysis.



The MD2 valve offers a convenient snuff-back feature for a clean, non-drip shut-off.

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) no feed
Weight	634 lb (287.6 kg) base machine; 868 lb (393.7 kg) fully configured
Ratio range	Fixed: 1:1 to 32:1
Ratio tolerance range	Up to +/- 1%
Max. flow rate – viscosity dependent	Up to 30 lb per min
Min. flow rate	3.5 cc per sec
Max. fluid working pressure	3000 psi (207 bar, 207 MPa)
Fluid viscosity range	Up to 30,000 centipoise
Compressed air	For MD2 Valve only
Pumps	Stainless steel with Chromex™ finish, tungsten carbide seats, UHMWPE pistons
Electrical power	230V/1-ph: 195-264V, 50/60 Hz; 230V/3-ph: 195-264V, 50/60 Hz; 400V/3-ph: 360-440V, 50/60 Hz
Gateway communication protocol	Discrete I/O, DeviceNet™, EtherNet I/P™, PROFIBUS™, PROFINET™

Ordering Information – Graco HFR Packages

Packages include: carbon steel Graco HFR modified for the lamination and flexible packaging market; 15 ft (4.6 m) hose configured to maintain proper mix ratios; MD2 valve with adjustable orifice kit. Feed systems and accessories ordered separately. For heated versions, please use HFR Configurator.

230-volt, single phase

Part No.	Ratio	Pumps
HFRL01	1.00:1	80/80
HFRL02	1.08:1	86/80
HFRL03	1.16:1	100/86
HFRL04	1.20:1	60/50
HFRL05	1.23:1	80/65
HFRL06	1.33:1	80/60
HFRL07	1.50:1	60/40
HFRL08	1.60:1	80/50
HFRL09	1.63:1	65/40
HFRL10	1.67:1	50/30
HFRL11	1.86:1	160/86
HFRL12	2.00:1	50/25
HFRL13	2.15:1	86/40
HFRL14	2.40:1	60/25
HFRL15	2.50:1	50/20

400-volt, three phase

Part No.	Ratio	Pumps
HFRL16	1.00:1	80/80
HFRL17	1.08:1	86/80
HFRL18	1.16:1	100/86
HFRL19	1.20:1	60/50
HFRL20	1.23:1	80/65
HFRL21	1.33:1	80/60
HFRL22	1.50:1	60/40
HFRL23	1.60:1	80/50
HFRL24	1.63:1	65/40
HFRL25	1.67:1	50/30
HFRL26	1.86:1	160/86
HFRL27	2.00:1	50/25
HFRL28	2.15:1	86/40
HFRL29	2.40:1	60/25
HFRL30	2.50:1	50/20

Feed Systems

24D329 For viscosities under 5,000 cps. Includes: one Husky 1050 diaphragm pump, desiccant air dryer for isocyanate drum, all required hose, fittings and siphon tube for supplying one metering pump from 55-gal drum.

24E398 For viscosities over 5,000 cps. Includes one 5:1 Monark® carbon steel pump, desiccant air dryer for isocyanate drum, all required hose, fittings and siphon tube for supplying one metering pump from 55-gal drum.

24G952 One 75-liter carbon steel tank with high and low level sensors for auto refill. A separate pump feed system above must be selected to feed the tanks. (Connector 123466 and cable 121226 must be ordered as well. See Accessories.)

Accessories

24K206	Nip sensor, 6.6 ft (2 m) Detects fluid level in the laminator puddle and actuates the HFR unit.
121728	Nip sensor extension cable, 13 ft (4 m)
123653	Nip sensor extension cable, 28 ft (8.5 m)
255247	MD2 adapter, 1:1 ratio check
24J318	Flow meter electronics kit
24J322	HG 6000 flow meter kit for ratio monitoring (two required)
CGMDN0	Communications Gateway Module - DeviceNet
CGMEP0	Communications Gateway Module - EtherNet I/P
CGMPB0	Communications Gateway Module - PROFIBUS
CGMPN0	Communications Gateway Module - PROFINET
24F843	Communications Gateway Module - Discrete I/O
24J415	CGM Mounting kit
123466	Connector 1M 12x4M12, MXF, PWR/CAN (only one is required for two tanks)
121226	Cable CAN MALE x FEMALE.4M (only one is required for two tanks)

Contact us today!

To receive product information or talk with a Graco representative, call 800-746-1334 or visit us online at www.graco.com.

