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.

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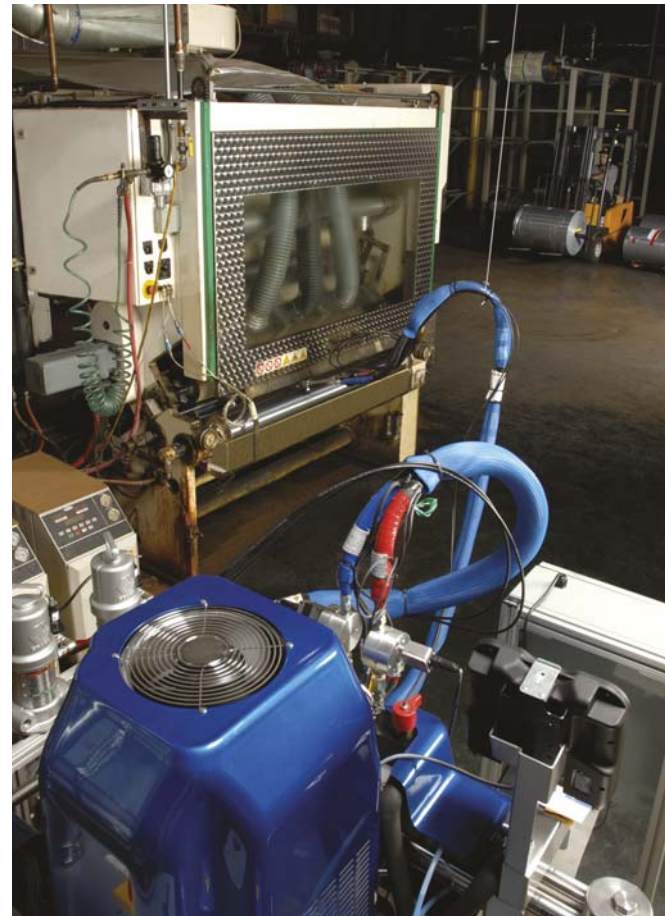
• Provides intermittent dosing actuated from nip sensor
• Provides on-ratio mixing with accuracies +/- 1%
• Handles higher viscosity products without heat
• Provides fixed ratio range 1:1 to 32:1
• Fixed ratio equipment can reduce operator tampering
  while in production
• Handles polyurethane materials

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 operators. In other words, if you learn one system, you are already familiar with the other.
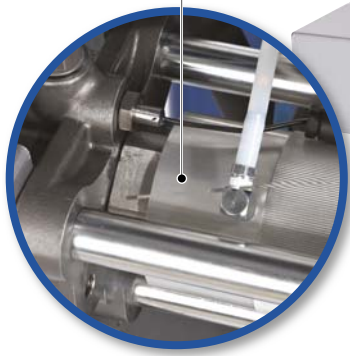
Motor Control Module

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

Advanced Display Module

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

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
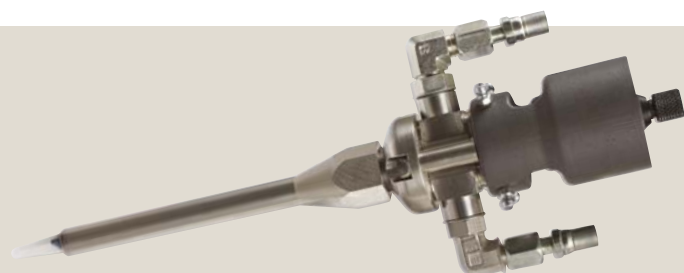
IsoGuard Select™ System

- Prevents isocyanate crystallization – less maintenance, more uptime

Compact Design

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

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.

Features

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

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

Graco HFR Metering System

Dimensions	122 (W) x 150 (H) x 86 (D) cm (48 x 59 x 34 in) no feed
Weight	287.6 kg (634 lb) base machine; 393.7 kg (868 lb) fully configured
Ratio range	Fixed: 1:1 to 32:1
Ratio tolerance range	Up to +/- 1%
Max. flow rate – viscosity dependent	Up to 22.6 kg (50 lb) per min
Min. flow rate	3.5 cc per sec
Max. fluid working pressure	207 bar (207 MPa, 3000 psi)
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™
Manual	3A1139

Ordering Information – Graco HFR Packages

Packages include: carbon steel Graco HFR modified for the lamination and flexible packaging market; 4.6 m (15 ft) 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 208 liter (55-gallon) drum.

24G714 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 208 liter (55-gallon) drum.

24G952 One 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.

Accessories

24K206	Nip sensor. Detects fluid level in the laminator puddle and actuates the HFR unit.
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

Graco is certified ISO 9001.