



# Therm-O-Flow<sup>®</sup>

Bulk Hot Melt Systems



PROVEN QUALITY. LEADING TECHNOLOGY.

# Therm-O-Flow. Any Hot Melt Material. Any Time.

## The most advanced technology on the market

With throughput capability 200% better than the leading competitor, Therm-O-Flow® bulk hot melt systems from Graco outperform the competition time after time and provide the best performing industrial bulk melt systems on the market.

Therm-O-Flow's advanced temperature control capability virtually eliminates overheated material, resulting in better adhesive quality and reduced rework due to degraded material.

Graco offers a complete line of Therm-O-Flow bulk hot melt systems and "point of use" melt systems – each can be configured to fit your specific application.



Six connection points for the 12 customer defined heat zones

### Low/Empty Level Sensors

Standard on every system. Adjustable, so you never run out of material unexpectedly.

### Advanced Display Module

Easy-to-use, graphic-based control screens reduce training time. Data downloads allow for better process monitoring and control.

### Integrated Drum Air Blow-Off

Reduces downtime with quick, easy drum changes

### Precision Temperature Control

Ensures consistent processes with accurate temperature control of up to 12 customer defined heat zones

### Easy Access Air Controls

Lets you control motor, ram and blow-off air independently

### Optional Light Tower Accessory

Lets operator know the unloader status from a distance, indicating readiness, alarms and warnings

### Merkur® and NXT® Air Motor Technology

Provides quiet, reliable, efficient operation, along with the right amount of power for the application

### Large Ram Cylinders

Increases pump loading and flow rate capability for high viscosity materials

### Severe-Duty™ Check-Mate® Pump

For trouble-free long life and reliable material movement

### Heated Platen

Smooth, finned or Mega-Flo options promote high melt rate and easy cleanup

### Caster Kit

Easy-to-maneuver casters are sold as a kit for the 5 gallon system



Therm-O-Flow 200 (55 gal)

# Improve Your Productivity and Throughput

## Applications:

- Insulating glass
- Automotive interiors
- RV lamination
- Window manufacturing
- Cable manufacturing
- Furniture assembly
- Door lamination
- Bookbinding
- Tape and label manufacturing
- Solar panels
- Resin binding
- Advanced composites
- And more...

## Materials:

- Butyl rubber
- Epoxies
- Ethylene vinyl acetate (EVA)
- Polyamide
- Polyurethane reactive (PUR)
- Pressure sensitive adhesives (PSA)
- Polyisobutylene (PIB)
- Prepreg resin mixes
- Warm melt sealers
- And others...



Therm-O-Flow 20 (5 gal)

## Why Therm-O-Flow?

### Improve process efficiency

- Automatic electric crossover eliminates downtime with tandem units – you keep production running while you change drums or pails
- Sensors signal when drums are getting low or empty, and more material is needed
- Pump throat seals and plate seals are the only wear components on Therm-O-Flow and can be changed in less than one hour
- New packing and pump rod designs extend the maintenance cycle at least seven times
- Heated platens have cast-in heaters which never need to be replaced – - if the heater fails under normal use, we will replace it under warranty for the life of the system.
- Material totalizers simplify preventive maintenance scheduling

### Improve production capacity

- Patented Mega-Flo™ Platen offers greater throughput while reducing material waste compared to a standard finned platen
- Eliminates need for lengthy oven melting of solid or high viscosity resins — melts resins on demand, only what you need
- Automatic daily startup without delay — Therm-O-Flow is ready when the shift starts
- Use downloadable operating data to monitor and control your process, reducing unplanned downtime and increasing process efficiency

### Reduce energy costs

- Temperature setback conserves energy during production breaks and prevents material charring
- Inactivity shutoff saves energy costs, promotes safety and prevents material charring

### Support environmental initiatives

- Built-in runaway control automatically shuts down supply system in event of component failure or empty drum
- The quiet, low-noise NXT Air Motor operates around 87 decibels, while other comparable motors operate up to 103 decibels

# Advanced Controls



## Mega-Flo platen: Industry-leading throughput

The patented Mega-Flo platen for 55 gallon (200 liter) drums assures smooth melting and consistent material output, no matter what the material

- Convex plate design wastes less material and saves money
- Non-stick PTFE-coated platens for easy maintenance
- Robust wiper seals protect moisture-sensitive material
- Melts through the thickest material with ease

## Smooth platens

- Flat surface promotes even heating and minimizes material degradation
- Ideal for higher-cost materials with low flow rates



55 gal (200 l)



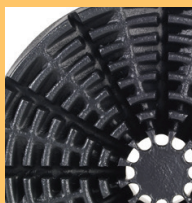
5 gal (20 l)

## Finned platens

- Provide highest melt rate for high flow and hard-to-melt materials



55 gal (200 l)



5 gal (20 l)

## Intuitive and easy to use

### Advanced Display Module

- Displays actual and set point temperatures for up to 12 zones per system (24 for tandem)
- Color coded run screen shows when each zone is ready
- Provides password protection for critical setup parameters
- Resettable material totalizer for job or daily material dispense tracking
- Material tracking and machine diagnostics can be downloaded to USB
- Provides programmable preventive maintenance schedule
- Languages supported: English, Spanish, German, French, Chinese, Japanese, Portuguese, Italian and Korean

### Designed for easy service

- Integrated self-diagnostics and serviceable design make maintenance quick and easy
- Easy-to-read alarms include high and low temperature, drum low and drum empty, runaway, and more

### Automated process integration

- Discrete I/O feature provides remote control inputs and outputs for integration with other automated equipment



# A Complete Line of Therm-O-Flow Systems

No matter what the application, Graco has a bulk hot melt solution



## Therm-O-Flow 200

- The ultimate hot melt bulk system
- Highest throughput in the industry†
- Provides accurate temperature control of four, eight or 12 customer defined heat zones
- Main unit easily integrates with a second Therm-O-Flow 200 or Therm-O-Flow 20 for tandem operation (up to 24 customer defined heat zones)
- Combine multiple Therm-O-Flow 200 units in parallel for even higher flow rates

*†Tested and compared to the leading competitor, using PSA and butyl*



## Therm-O-Flow 20

- Perfect for 5 gallon (20 liter) applications in both low and high flow settings
- Provides accurate temperature control of four, eight or 12 customer defined heat zones
- Main unit easily integrates with a second Therm-O-Flow 200 or Therm-O-Flow 20 for tandem operation (up to 24 customer defined heat zones)
- Compact footprint lets you place unit near application [3x3 ft (1x1m) approx.]

## Better performance, higher melt rates

Advanced air motor technology, a powerful piston pump and patented platen design results in throughput capability up to 200% greater than the competition.

MODEL	PUMP STYLE	CONTAINER SIZE	MAXIMUM MELT RATE	MAXIMUM FLOW RATE	VISCOSITY
Therm-O-Flow 20	2-ball (15:1)	5 gal (20 l)	1.3 lb/min* (0.6 kg/min)	9 lb/min* (4 kg/min)	Low to medium
Therm-O-Flow 20	Check-Mate Priming Piston	5 gal (20 l)	1.5 lb/min* (0.7 kg/min)	12 lb/min* (5.4 kg/min)	Low to ultra high
Therm-O-Flow 200 w/Mega-Flo plate**	Check-Mate Priming Piston	55 gal (200 l)	11 lb/min* (5 kg/min)	12 lb/min* (5.4 kg/min)	Low to ultra high

*\* Will vary depending on type of material, results based on typical PSA \*\* Other plates also available.*

# Point-of-Use Resin Heating

## Industry Snapshot: Advanced Composites Applications

Demand for advanced composites is growing on a global scale. The industry wants faster cycle rates, higher capacity, and is turning to faster curing resins to speed turnaround times.

### Benefits of point-of-use resin heating

#### 1. Heat only the resin you need – when you need it

Therm-O-Flow provides precise thermal control with individual heat zones.

#### 2. Reduce resin waste

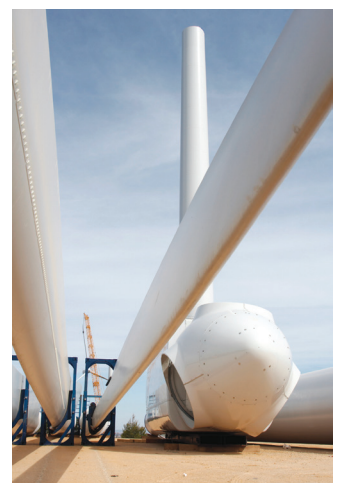
Therm-O-Flow eliminates the need for conventional ovens or drum heaters, which can cause material degradation from heat aging.

#### 3. Improve logistics

Therm-O-Flow delivers material directly to metering and dispensing systems – creating a “just in time” ready supply of thermally conditioned resins.

#### 4. Faster cycle times

Manufacturers can use innovative, faster-curing resins for decreased curing times – a key requirement for fast cycle rate mass production.



# Technical Specifications

	THERM-O-FLOW 200 (ALL)	THERM-O-FLOW 20 (23:1, 36:1, 70:1)	THERM-O-FLOW 20 (15:1)
<b>Displacement pump effective area</b>			
Merkur and NXT	1.24 in <sup>2</sup> (8 cm <sup>2</sup> )	1.24 in <sup>2</sup> (8 cm <sup>2</sup> )	
President®			0.884 in <sup>2</sup> (5.7 cm <sup>2</sup> )
<b>Volume per cycle</b>			
Merkur and NXT	11.7 in <sup>3</sup> (192 cm <sup>3</sup> )	11.7 in <sup>3</sup> (192 cm <sup>3</sup> )	
President			3.8 in <sup>3</sup> (62.3 cm <sup>3</sup> )
<b>Pump cycles per 1 gal (3.8 l)</b>			
Merkur and NXT	21	21	
President			61
<b>Fluid flow at 60 cpm</b>	2.8 U.S. gpm (10.6 lpm)	2.8 U.S. gpm (10.6 lpm)	0.9 U.S. gpm (3.41 lpm)
<b>Max. fluid working pressure</b>			
T15 (President 4.25 in)			1800 psi (125 bar, 12.6 MPa)
T23 (Merkur 6.0 in)	2300 psi (159 bar, 15.9 MPa)	2300 psi (159 bar, 15.9 MPa)	
T36 (Merkur 7.5 in)	3000 psi (207 bar, 20.7 MPa)	3000 psi (207 bar, 20.7 MPa)	
T70 (NXT 6500)	3000 psi (207 bar, 20.7 MPa)	3000 psi (207 bar, 20.7 MPa)	
<b>Max. air input pressure (pumps)</b>			
T15 (President 4.25 in)			120 psi (8.3 bar, 0.8 MPa)
T23 (Merkur 6.0 in)	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	
T36 (Merkur 7.5 in)	82 psi (5.7 bar, 0.57 MPa)	82 psi (5.7 bar, 0.57 MPa)	
T70 (NXT 6500)	43 psi (2.9 bar, 0.29 MPa)	43 psi (2.9 bar, 0.29 MPa)	
<b>Max. pump operating temperature</b>	400°F (204°C)	400°F (204°C)	400°F (204°C)
<b>Air motor piston effective area</b>			
T15 (President 4.25 in)			14 in <sup>2</sup> (90 cm <sup>2</sup> )
T23 (Merkur 6.0 in)	28.3 in <sup>2</sup> (182 cm <sup>2</sup> )	28.3 in <sup>2</sup> (182 cm <sup>2</sup> )	
T36 (Merkur 7.5 in)	44.2 in <sup>2</sup> (285 cm <sup>2</sup> )	44.2 in <sup>2</sup> (285 cm <sup>2</sup> )	
T70 (NXT 6500)	84.5 in <sup>2</sup> (545 cm <sup>2</sup> )	84.5 in <sup>2</sup> (545 cm <sup>2</sup> )	
<b>Stroke length</b>	4.75 in (120 mm)	4.75 in (120 mm)	4 in (102 mm)
<b>Air inlet size</b>	3/4 npsm(f)	3/4 npsm(f)	3/4 npsm(f)
<b>Pump fluid outlet size</b>			
Merkur & NXT	1 in npt(f)	1 in npt(f)	
President			1/2 in npt(f)
<b>Wetted parts</b>	Carbon steel; brass chrome; zinc; nickel plating; stainless steel (304, 316, 440, and 17-4 PH); alloy steel; ductile iron; PTFE	Same as TOF 200	Carbon steel; chrome over SST; PTFE
<b>Weight</b>	1630 lb (739 kg)	840 lb (381 kg)	840 lb (381 kg)
<b>Height (fully raised)</b>	110 in (279 cm)	73.5 in (187 cm)	73.5 in (187 cm)
<b>Footprint (width x depth)</b>	59 x 37 in (1498.6 x 939 mm)	40 x 36 in (1016 x 914 mm)	40 x 36 in (1016 x 914 mm)
<b>Instruction manuals</b>			
Therm-O-Flow 200	334130		
Therm-O-Flow 20		334129	
Therm-O-Flow 20 15:1			334129
Therm-O-Flow NXT Air Motor	311238	311238	
President Air Motor			306982
Two-ball pump			307431
Check-Mate 800 Displacement Pump	334127	334127	
Hot Melt Manual Dispense Gun	311209	311209	311209
Therm-O-Flow Automatic Dispense Valves	310538	310538	310538
Endure Automatic Dispense Valves	309376	309376	309376
<b>Pneumatic requirements</b>			
Compressed air (typical)	25-50 scfm	25-50 scfm	25-50 scfm
<b>Supply voltage (as selected)</b>	220/240V 3-ph & 50/60 Hz 380/400V 3-ph & 50/60 Hz 470/490V 3-ph & 50/60 Hz 600V 3-ph & 50/60 Hz	220/240V 3-ph & 50/60 Hz 380/400V 3-ph & 50/60 Hz 470/490V 3-ph & 50/60 Hz 600V 3-ph & 50/60 Hz	220/240V 3-ph & 50/60 Hz 380/400V 3-ph & 50/60 Hz 470/490V 3-ph & 50/60 Hz 600V 3-ph & 50/60 Hz
<b>Peak consumption*</b>			
With Mega-Flo platen	30.2 KVa		
With standard platen	27.1 KVa	13.1 KVa	9.1 KVa
With smooth platen	27.1 KVa	13.1 KVa	9.1 KVa



## 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

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