GRACO

Therm-O-Flow®

Bulk Melt Systems with NXT™ Technology

PROVEN QUALITY. LEADING TECHNOLOGY.

Therm-O-Flow. Any Material. Any Time.

The most advanced technology on the market

With melt rates that are at least 60 percent higher than the leading competitor, Therm-O-Flow® bulk melt systems from Graco® outperform the competition time after time. In fact, Therm-O-Flow solutions are the best performing industrial bulk melt systems on the market.

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

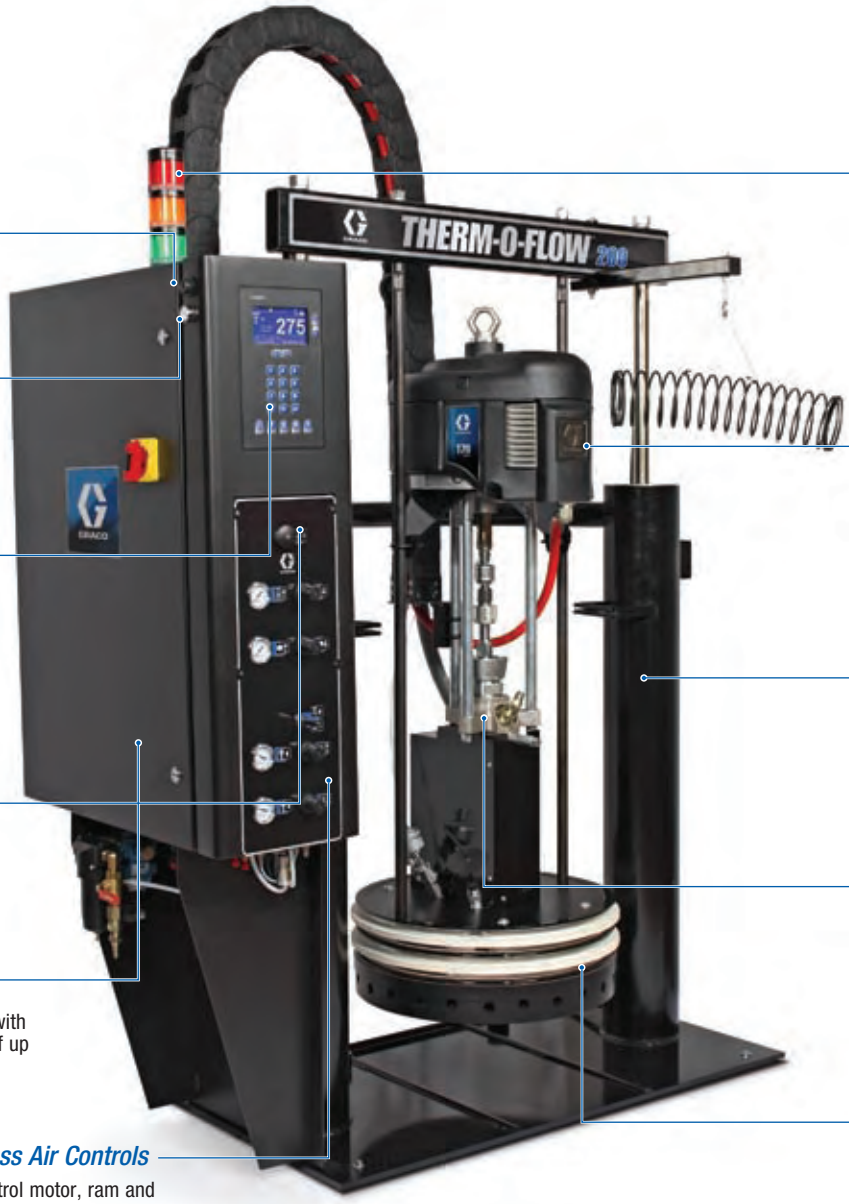
Graco offers a complete line of Therm-O-Flow bulk melt systems – each configured to fit your specific application.

Applications:

- Insulating glass
- Automotive interiors
- RV lamination
- Window manufacturing
- Cable manufacturing
- Furniture assembly
- Door lamination
- Bookbinding
- Tape and label manufacturing

Materials:

- Butyl Rubber
- Ethylene Vinyl Acetate (EVA)
- Polyamide
- Polyurethane Reactive (PUR)
- Pressure Sensitive Adhesives (PSA)
- Polyisobutylene (PIB)
- Warm Melt Sealers



Ethernet Connection
Provides remote reporting capabilities

Maintenance Call Button
Maximizes productivity by signaling maintenance crew

EasyKey™ Controls
Easy-to-use, eye-level controls improve setup and operation, speeding up production

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 zones

Easy Access Air Controls
Lets you control motor, ram and blow-off air independently from front panel

Light Tower
Lets operator know the unloader status from a distance, indicating readiness, alarms and warnings to reduce downtime

NXT™ Air Motor
Provides quieter operation, better performance and improved efficiency

Large Ram Cylinders
Increases pump loading and flow rate capability

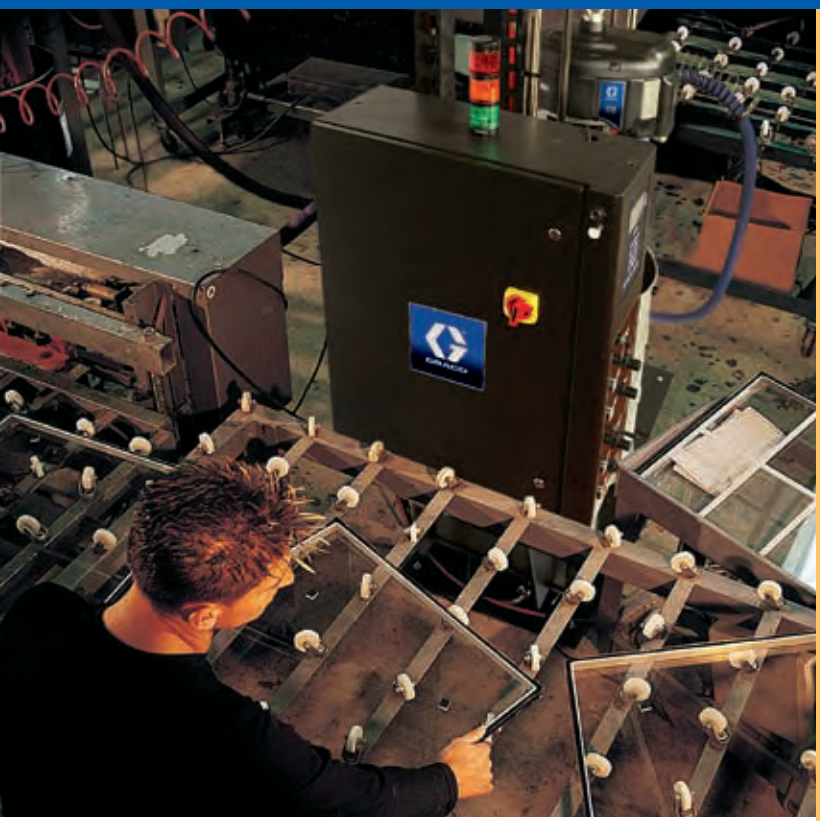
Severe-Duty Check-Mate® Pump
For trouble-free long life and reliable material movement with minimal pressure drop

Heated Platen
Provides industry-leading melt rates and easy cleanup

Therm-O-Flow 200

(Advanced model shown)

Improve Your Productivity and Throughput



Therm-O-Flow 20

Improve process efficiency

- Automatic electric crossover eliminates downtime with tandem units
- Drum low and empty sensors signal when drum changes are needed
- Quick-change pump packings provide faster, easier maintenance
- New, extended-life packing cartridges are available for abrasive materials
- Heated platens have cast-in heaters which never need to be replaced – and carry a lifetime warranty
- Material totalizers simplify preventive maintenance scheduling
- Pump throat seals and plate seals are the only wear components on Therm-O-Flow and can be changed in less than one hour
- Self-diagnostics allow for predictive and preventive maintenance strategies – improving process availability

Improve production capacity

- Patented Mega-Flo™ Platen offers industry-leading melt rates and reduces material waste
- 7-Day timer provides automatic daily startup — Therm-O-Flow is ready when the shift starts
- Preventive maintenance warnings reduce unplanned downtime

Reduce energy costs

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

Support environmental initiatives

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

Advanced Controls

Intuitive and easy to use

EasyKey™ Controls

- Displays both actual and set point temperatures for up to eight zones at a time
- Large single temperature zone display can be read and monitored from up to 25 feet (7.6 meters) away
- Material totalizer for preventative maintenance scheduling
- Resettable material totalizer for job or daily material dispense totaling
- Languages supported: English, Spanish, German, French, Chinese and Japanese

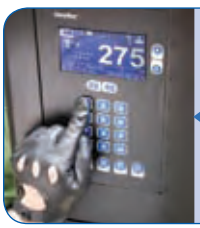
Designed for easy service

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

Automates process information integration

- Remote reporting through Ethernet connection includes material totalizers, setup replication, system alarm log, and temperature and volume recording
- Discrete I/O feature provides remote control inputs and outputs for automation and integration with other automated equipment

Advanced controls support manufacturing process improvement initiatives such as lean manufacturing.



Test Drive Therm-O-Flow's EasyKey Controls at www.graco.com!

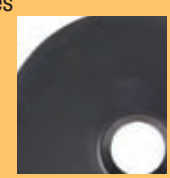
Mega-Flo™ offers industry-leading melt rates for greater production capacity

The patented Mega-Flo platen for 55 gallon (200 liter) units provides the highest output per watt of power in the industry. No matter what the material, Mega-Flo assures smooth melting with the least amount of material degradation.

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

Smooth platens

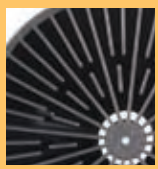
- Even surface heats less material for maximum efficiency
- Ideal for higher-cost materials with low flow rates

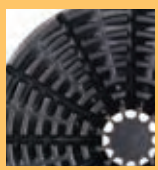

55 gal (200 l)


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)

A Complete Line of Therm-O-Flow Systems

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

Therm-O-Flow 200

- The ultimate hot melt bulk system
- Highest melt rate in the industry†
- Six to eight zones standard, up to 12 heat zones with an optional four-zone expansion box
- Main unit easily integrated with a second Therm-O-Flow 200 or Therm-O-Flow 20 for tandem operation

Therm-O-Flow 20/NXT

- Perfect for 5 gallon (20 liter) applications where high performance is still needed
- Double the power for high melt rate needs
- Allows accurate temperature control of six zones (standard). Up to 10 heat zones with an optional four-zone expansion box
- Main unit easily integrated with a second Therm-O-Flow 200 or Therm-O-Flow 20 for tandem operation

Therm-O-Flow 20/Mini-5

- Ideal for low to medium viscosity materials
- Double the power for high melt rate needs
- Allows accurate temperature control of four zones (standard). Up to eight heat zones with an optional four-zone expansion box
- Tandem capabilities with other Therm-O-Flow Mini-5's

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

Better performance, higher melt rates

Advanced NXT Air Motor technology, a powerful piston pump and patented platen design result in Therm-O-Flow melt rates being at least 60 percent higher than the competition.

MODEL	PUMP STYLE	CONTAINER SIZE	MAXIMUM MELT RATE	MAXIMUM FLOW RATE	VISCOSITY
Therm-O-Flow 20	Mini-5 2-ball	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.*

Therm-O-Flow Selection Guide

Therm-O-Flow 200 Features and Options

FEATURE	BASE MODEL	ADVANCED MODEL	TANDEM PRIMARY	TANDEM SECONDARY
EasyKey Interface	•	•	•	*
7-Day Timer	•	•	•	•
Material Totalizer	•	•	•	•
Temperature Standby	•	•	•	•
Inactivity Shut-off	•	•	•	•
Pump Runaway Control	•	•	•	•
Adjustable Heat Soak Timers	•	•	•	•
Integrated Self-Diagnostics	•	•	•	•
Drum Low & Empty Sensors & Alarm	Optional	•	•	•
Light Tower	Optional	•	•	*
Maintenance Call Button	Optional	•	•	*
Remote Control I/O	Optional	•	•	*
Remote Reporting	Optional	•	•	*
Drum Ram Post Saddle Clamps	Optional	Optional	Optional	Optional
Heavy Duty Drum Band Clamp	Optional	Optional	Optional	Optional
Fiber Drum Reinforcement Shell	Optional	Optional	Optional	Optional
Vent Hood Kit	Optional	Optional	Optional	Optional

* Included in Tandem Primary

Custom design configuration for Therm-O-Flow 200

Sample number:
T0F200-A [5] [A] [2] [P] [6] [4] [A]

NXT Air Motor Power Ratio
1 T23 (23:1), normal-duty PTFE packings
2 T36 (36:1), normal-duty PTFE packings
3 T70 (70:1), normal-duty PTFE packings
4 T23 (23:1), heavy-duty Carbon Fiber packings for abrasive materials
5 T36 (36:1), heavy-duty Carbon Fiber packings for abrasive materials
6 T70 (70:1), heavy-duty Carbon Fiber packings for abrasive materials

Heated Platen
A Mega-Flo
B Finned
C Smooth

Platen Wipers
1 Black EPDM Hose Wiper upper and lower (for Butyl Rubber and like materials)
2 Green Silicone Hose Wiper upper, Black EPDM lower (for Butyl Rubber and like materials)
3 White Silicone T-Wiper upper, Black EPDM Hose Wiper lower (for PUR, PSA, EVA and like materials)
4 White Silicone T-Wiper upper and lower (for PUR, PSA, EVA and like materials)

Ram Power
P Pneumatic
H Hydraulic

Heat Zones
6 Six Zones
8 Eight Zones

Voltage
0 No controls
2 230V
3 380 – 400V
U 415 – 425V
4 480V
5 575V

System Model
B Base model
A Advanced model
T Tandem primary model
S Tandem secondary model

Select the specific air motor, platen, heat zone controls, hose/gun kits and accessories you need for your specific bulk melt application.

Many other options are available

See your distributor for more detailed ordering information.

Therm-O-Flow 20 Features and Options

FEATURE	TOF20 MINI-5	TOF20	TOF20 TANDEM PRIMARY	TOF20 TANDEM SECONDARY
Air Motor / Ratio	President® / 15:1	NXT / 23:1, 36:1, 70:1	15:1 / 23:1, 36:1, 70:1	15:1 / 23:1, 36:1, 70:1
Heat Zones	4	6	4 or 6	4 or 6
EasyKey Interface	•	•	•	-
7-Day Timer	•	•	•	•
Material Totalizer	•	•	•	•
Temperature Standby	•	•	•	•
Inactivity Shut-off	-	•	•	•
Pump Runaway Control	-	•	•	•
Adjustable Heat Soak Timers	•	•	•	•
Integrated Self-Diagnostics	•	•	•	•
Drum Low & Empty Sensors & Alarm	Optional	Optional	Required *	Required *
Light Tower	Optional	Optional	Optional	-
Maintenance Call Button	Optional	Optional	Optional	-
Remote Control I/O	Optional	Optional	Optional	-
Remote Reporting	Optional	Optional	Optional	-
Vent Hood Kit	Optional	Optional	Optional	Optional

* Drum Low & Empty Sensor Kit is required for tandem system operation.

Custom design configuration for Therm-O-Flow 20

Sample number:

T | 4 | 4 | 2 | F | B

Zones
- 0 No Controls
- 4 Four Zones
- 6 Six Zones

Voltage
- 0 No Controls
- 2 230V
- 3 380 – 400V
- U 415 – 425V
- 4 480V

Air Motor & Pump
- 0 President 15:1, Two-Ball Lower
- 1 T23 (23:1), NXT
- 2 T36 (36:1), NXT
- 3 T70 (70:1), NXT

Platen
- F Finned
- S Smooth

Controls
- 0 No Controls
- B Base Model
- S Tandem Secondary

Therm-O-Flow 20 with NXT air motor

Therm-O-Flow 20/Mini-5

Select the specific air motor, platen, heat zone controls, hose/gun kits and accessories you need for your specific bulk melt application.

Many other options are available

See your distributor for more detailed ordering information.

Advantages of Therm-O-Flow Technology

Improves process efficiency with tandem operation

Configure your Therm-O-Flow Systems to operate in tandem for better productivity and improved uptime.

- Automatic electric crossover eliminates downtime – you get double the material volume before you need to change drums or pails
- No stopping production to change a drum or pail
- Only one interface needed for two systems
- Many tandem combinations are available including:
  - Two Therm-O-Flow 200 units
  - One Therm-O-Flow 200 operating with one Therm-O-Flow 20
  - Two Therm-O-Flow 20 units
  - Two Therm-O-Flow 20/Mini-5 units

High output for improved production capacity

High melt rate, combined with the large number of heat zones and high pressure result in greater productivity and performance.

- Allows use of multiple hoses and applicators
- Long hose and drop lengths
- High flow rates – even with high-viscosity materials

Supports predictive diagnostics

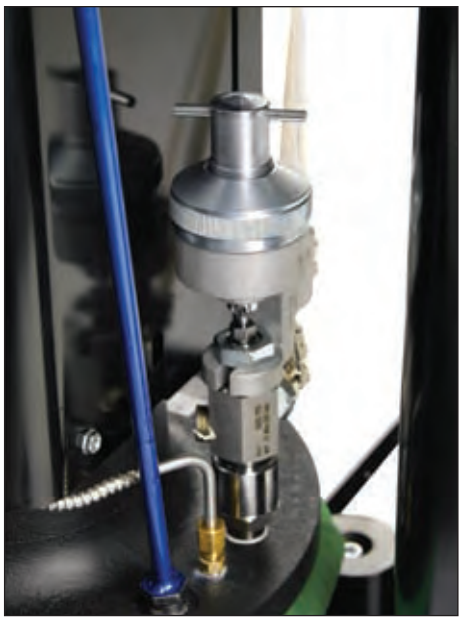
- Self-diagnostics allow for advanced predictive and preventive maintenance strategies, letting you plan for maintenance around your production schedule

Durable, long-lasting NXT Technology

- The NXT air motor is proven to last 10 times longer than its predecessor, the Graco® King
- NXT air motor is the highest technology air motor on the market
- Rugged body armor won't rust or dent
- Modular design for easy maintenance

Easy to use

- Large graphic interface is intuitive and simple to use, resulting in reduced training and better equipment utilization
- One-sided control and access
- Easy maintenance
  - Separate pneumatic and electric controls
  - Quick electrical connections



Integrated drum air blow off valve reduces downtime with quick drum changes

Finned platens offer the highest melt rates and are ideal for high flow or hard-to-melt materials

Technical Specifications

	Therm-O-Flow 200	Therm-O-Flow 20	Therm-O-Flow 20/Mini-5
Displacement pump effective area	1.24 in² (8 cm²)	1.24 in² (8 cm²)	0.884 in² (5.7 cm²)
Volume per cycle	11.7 in³ (192 cm³)	11.7 in³ (192 cm³)	3.5 in³ (57.4 cm³)
Pump cycles per 1 gal (3.8 l)	21	21	66
Fluid flow at 60 cpm	2.8 U.S. gpm (10.6 lpm)	2.8 U.S. gpm (10.6 lpm)	0.9 U.S. gpm (3.41 lpm)
Max. fluid working pressure			
T15			1800 psi (124 bar, 12.4 MPa)
T23	2300 psi (159 bar, 15.9 MPa)	2300 psi (159 bar, 15.9 MPa)	
T36	3000 psi (207 bar, 20.7 MPa)	3000 psi (207 bar, 20.7 MPa)	
T70	3000 psi (207 bar, 20.7 MPa)	3000 psi (207 bar, 20.7 MPa)	
Max. air input pressure			
T15			100 psi (7 bar, 0.7 MPa)
T23	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	
T36	82 psi (5.7 bar, 0.57 MPa)	82 psi (5.7 bar, 0.57 MPa)	
T70	43 psi (2.9 bar, 0.29 MPa)	43 psi (2.9 bar, 0.29 MPa)	
Max. pump operating temperature	400°F (204°C)	400°F (204°C)	400°F (204°C)
Air motor piston effective area			
T15			14 in² (90 cm²)
T23	28.5 in² (183.9 cm²)	28.5 in² (183.9 cm²)	
T36	44.6 in² (287.7 cm²)	44.6 in² (287.7 cm²)	
T70	86.8 in² (560 cm²)	86.8 in² (560 cm²)	
Stroke length	4.75 in (120 mm)	4.75 in (120 mm)	4 in (102 mm)
Air inlet size	1/2 npsm(f)	1/2 npsm(f)	1/2 npsm(f)
Pump fluid outlet size	1 npt(f)	1 npt(f)	1/2 npt(f)
Wetted parts	Carbon steel; brass chrome; zinc; and nickel-plating; 304, 316, 440, and 17-4 PH grades of SST; alloy steel; ductile iron; PTFE	Same as TOF 200	Carbon steel; chrome over SST; PTFE
Weight	1200 lb (545 kg)	750 lb (340 kg)	650 lb (295 kg)
Displacement pump weight	81 lb (37 kg)	81 lb (37 kg)	
Instruction manuals			
Therm-O-Flow 200	311208		
Therm-O-Flow 20 Mini-5		311976	
Therm-O-Flow 20 15:1			312094
Therm-O-Flow NXT Air Motor	311238	311238	
President Air Motor			308982
Mini-5 pump			307431
Check-Mate 800 Displacement Pump	308570	308570	
Hot Melt Manual Dispense Gun	311209	311209	311209
Therm-O-Flow Automatic Dispense Valves	310538	310538	310538
Endure Automatic Dispense Valves	309376	309376	310538
Power requirements			
Compressed air	25-50 scfm typical	25-50 scfm typical	25-50 scfm typical
Electricity voltage (as selected)	220/240 3-phase & 50/60 Hz 380/400 3-phase & 50/60 Hz 415/425 3-phase & 50/60 Hz 470/490 3-phase & 50/60 Hz 575 3-phase & 50/60 Hz	220/240 3-phase & 50/60 Hz 380/400 3-phase & 50/60 Hz 415/425 3-phase & 50/60 Hz 470/490 3-phase & 50/60 Hz	220/240 3-phase & 50/60 Hz 380/400 3-phase & 50/60 Hz 415/425 3-phase & 50/60 Hz 470/490 3-phase & 50/60 Hz
Peak consumption*			
With Mega-Flo melt grid	27.5 KVa		
With standard melt grid	24.5 KVa	8.7 KVa	6.4 KVa
With smooth melt grid	24.5 KVa	8.7 KVa	6.4 KVa

Therm-O-Flow machines and complete configured packages carry the CE mark.

* Includes drum melt grid, pump and a 5KVa transformer for the 230 volt hoses and accessories.