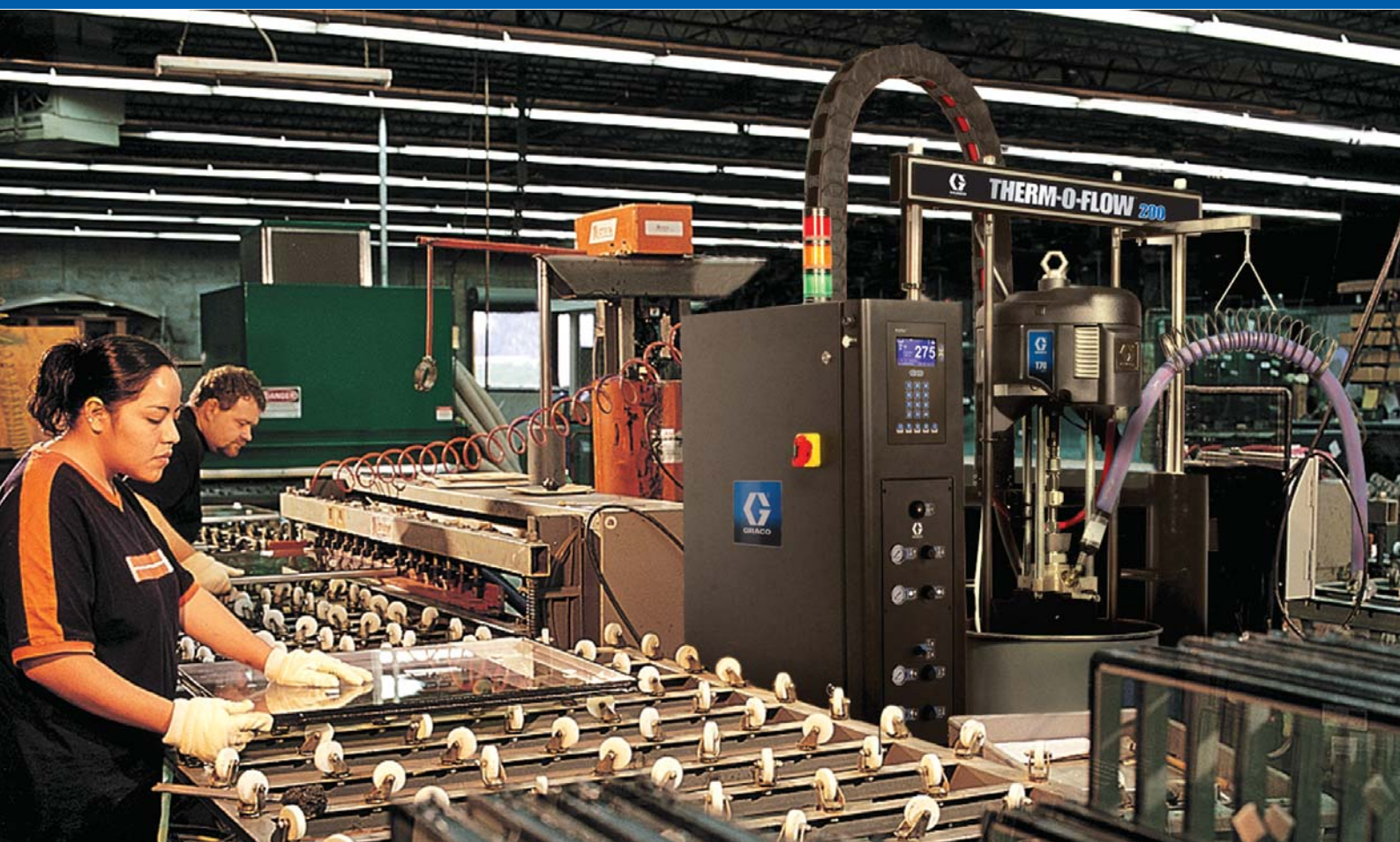




Therm-O-Flow®

Bulk Melt Systems with NXT™ Technology



The Solution for all your Bulk Melt Applications

- Exceptional performance with a range of materials
- Offers the highest melt rates in the industry for improved production capacity
- Precise temperature control prevents material damage and results in better adhesive quality
- Advanced control technology that is easy to use
- Custom-configured for your specific application

PROVEN QUALITY. LEADING TECHNOLOGY.

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

A highly advanced technology on the market

Therm-O-Flow solutions are amongst 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.

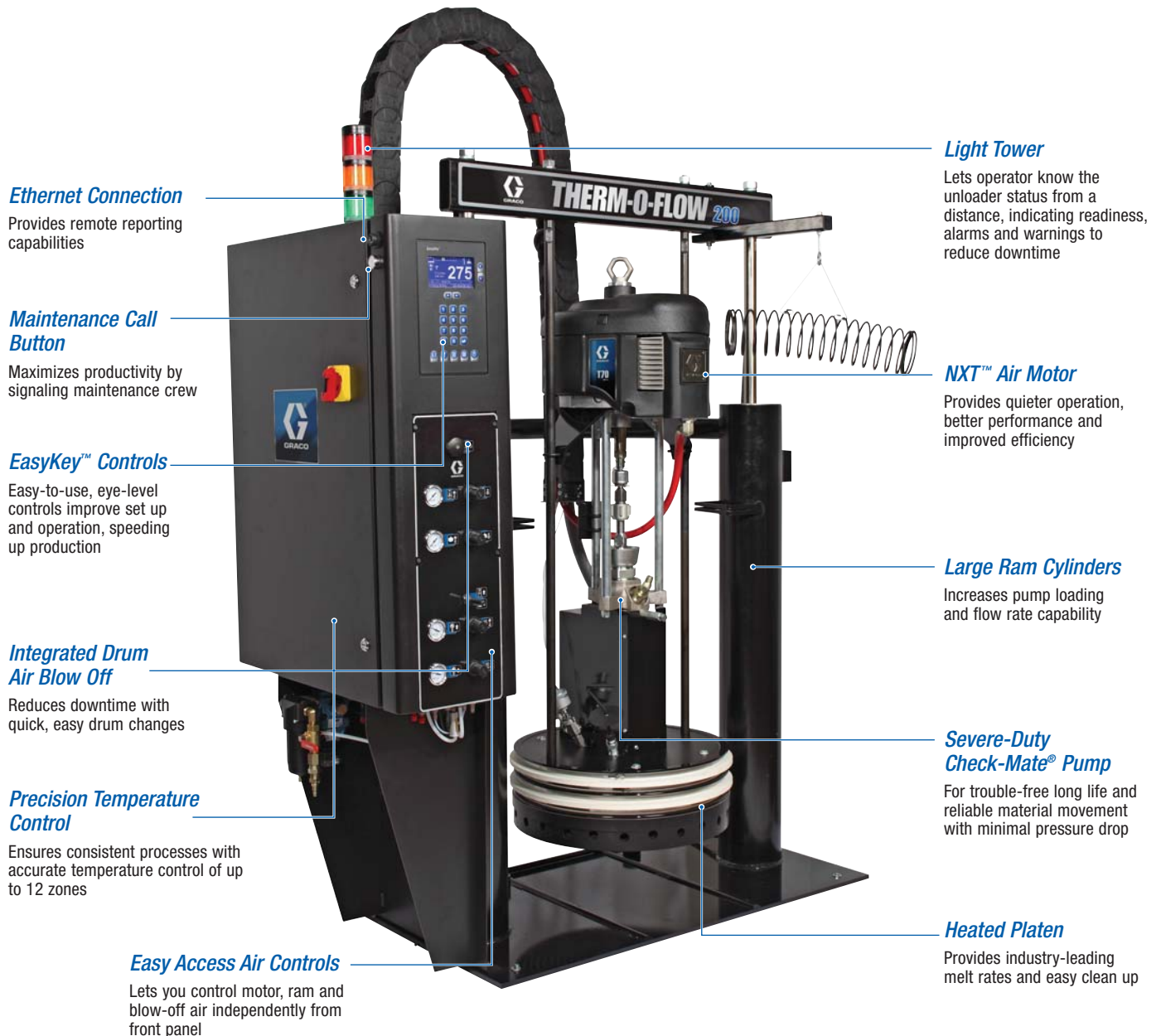
Graco offers a complete line of Therm-O-Flow bulk melt systems – each configured to fit your specific application.

Applications:

- Insulating glass
- Automotive interiors
- RV lamination
- Window manufacturing
- Cable manufacturing
- Furniture assembly
- Door lamination
- Book Binding
- 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 set up 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

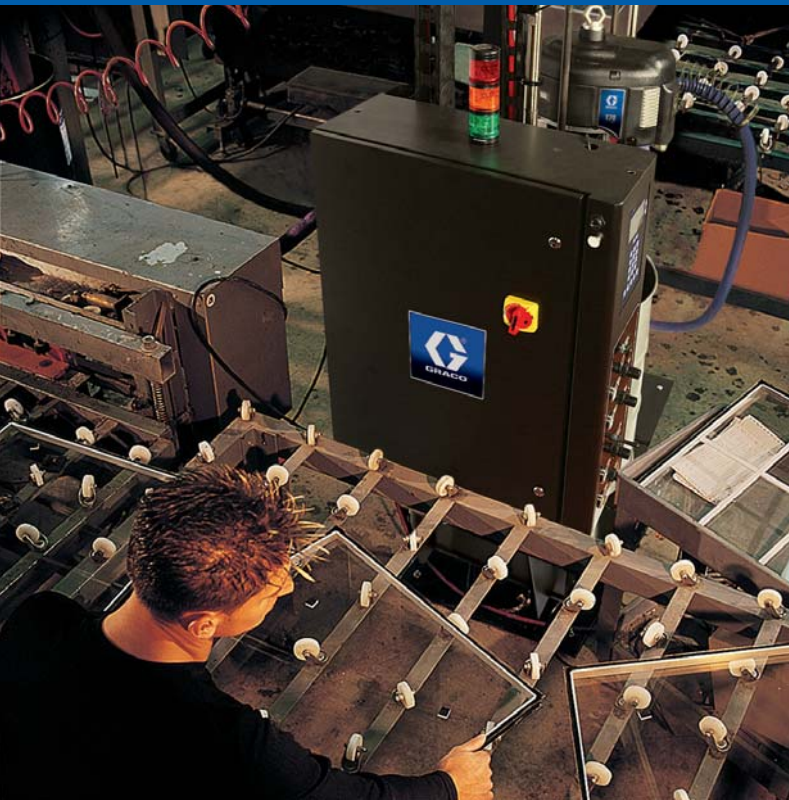
Large Ram Cylinders
Increases pump loading and flow rate capability

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 clean up

Therm-O-Flow 200
(Advanced model shown)

Improve Your Productivity and Flow



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 preventative 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
- Preventative 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



Therm-O-Flow 20

Advanced Controls

Intuitive and easy to use

EasyKey™ Controls

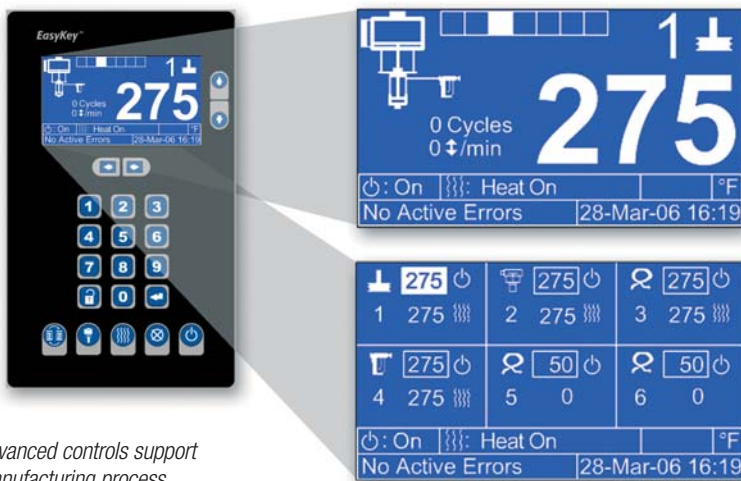
- Displays both actual and set point temperatures for up to eight zones at a time
- Large single temperature zone display can be read and monitored from up to 7.5 m away
- Material totalizer for preventative maintenance scheduling
- Resettable material totalizer for job or daily material dispense totaling
- 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 200 l units provides high output. 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



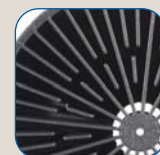
200 l



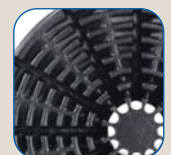
20 l

Finned platens

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



200 l



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
- 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 20 l 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

Better performance, higher melt rates

Advanced NXT Air Motor technology, a powerful piston pump and patented platen design result in optimal Therm-O-Flow melt rates.

MODEL	PUMP STYLE	CONTAINER SIZE	MAXIMUM MELT RATE	MAXIMUM FLOW RATE	VISCOSITY
Therm-O-Flow 20	Mini-5 2-ball	20 l	0.6 kg/min	4 kg/min	Low to medium
Therm-O-Flow 20	Check-Mate Priming Piston	20 l	0.7 kg/min	5.4 kg/min	Low to ultra high
Therm-O-Flow 200 w/Mega-Flo plate**	Check-Mate Priming Piston	200 l	5 kg/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

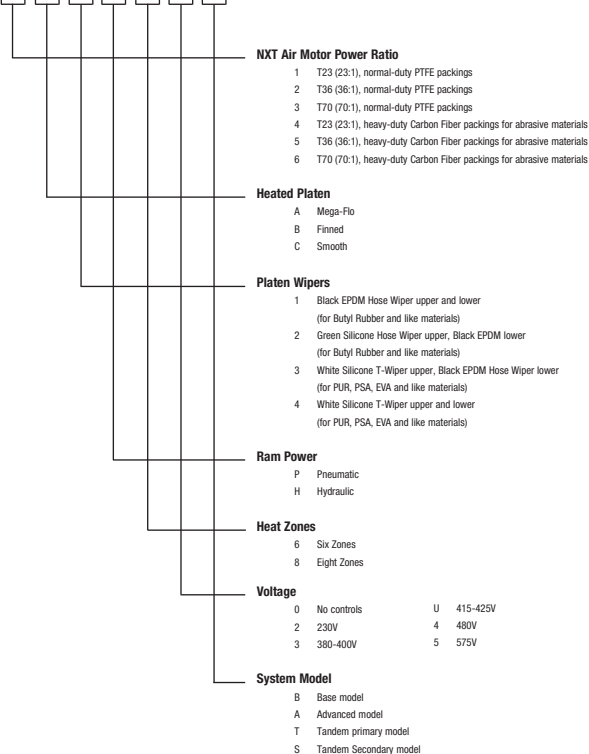
FEATURE	BASE MODEL	ADVANCED MODEL	TANDEM PRIMARY	TANDEM SECONDARY
EasyKey Interface	•	•	•	*
7-Day Timer	•	•	•	•
Material Totalizer	•	•	•	•
Temperature Standby	•	•	•	•
Inactivity Shut-off	•	•	•	•
Pump Runaway Control	•	•	•	•
Adjustable Heat Soak Timers	•	•	•	•
Integrated Self-Diagnostics	•	•	•	•
Drum 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:

TOF200-A 5 | A | 2 | P | 6 | 4 | A



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

Therm-O-Flow 20 Features and Options

FEATURE	TOF 20 MINI-5	TOF 20	TOF 20 TANDEM PRIMARY	TOF 20 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
- Voltages**
 - 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

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 allows for advanced predictive and preventative 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
- 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 in ² (8 cm ²)	1.24 in ² (8 cm ²)	0.884 in ² (5.7 cm ²)
Volume per cycle	11.7 in ³ (192 cm ³)	11.7 in ³ (192 cm ³)	3.5 in ³ (57.4 cm ³)
Pump cycles per 1 gal. (3.8 liters)	21	21	66
Fluid flow at 60 cpm	10.6 lpm	10.6 lpm	3.41 lpm
Max. fluid working pressure			
T15			124 bar (12.4 MPa, 1800 psi)
T23	159 bar (15.9 MPa, 2300 psi)	159 bar (15.9 MPa, 2300 psi)	
T36	207 bar (20.7 MPa, 3000 psi)	207 bar (20.7 MPa, 3000 psi)	
T70	207 bar (20.7 MPa, 3000 psi)	207 bar (20.7 MPa, 3000 psi)	
Max. air input pressure			
T15			7 bar (0.7 MPa, 100 psi)
T23	7 bar (0.7 MPa, 100 psi)	7 bar (0.7 MPa, 100 psi)	
T36	5.7 bar (0.57 MPa, 82 psi)	5.7 bar (0.57 MPa, 82 psi)	
T70	2.9 bar (0.29 MPa, 43 psi)	2.9 bar (0.29 MPa, 43 psi)	
Max. pump operating temperature	204°C	204°C	204°C
Air motor piston effective area			
T15			14 in ² (90 cm ²)
T23	28.5 in ² (183.9 cm ²)	28.5 in ² (183.9 cm ²)	
T36	44.6 in ² (287.7 cm ²)	44.6 in ² (287.7 cm ²)	
T70	86.8 in ² (560 cm ²)	86.8 in ² (560 cm ²)	
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	545 kg	340 kg	295 kg
Displacement pump weight	37 kg	37 kg	
Instruction manuals			
Therm-O-Flow 200	311208		
Therm-O-Flow 20 15:1		312094	
Therm-O-Flow 20 Mini-5			311976
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)	220/230 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	220/230 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	220/230 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.

Ordering Information

Therm-O-Flow 20 Mini-5



Accessories

- 288543 Therm-O-Flow 20 and Therm-O-Flow Mini-5 Hose Support Kit
Used for second hose exiting the pump.
- 255224 Easy Key Replacement Kit

Repair Kits

- 918439 Ram Repair Kit
Kit contains O-rings, retaining rings, piston and bumper for 20 l, 3 in (76 mm) dual post ram.
- C31065 Wiper Seal Replacement Kit
Contains silicone coated round wiper seal with internal spring for 20 l ram plate.
- 918424 Pump Repair Kit
For heated President 15:1 pump

Therm-O-Flow 20



Accessories

- 255233 Drum Low and Empty Sensor Kit
- 288543 Therm-O-Flow 20 and Therm-O-Flow Mini-5 Hose Support Kit
Used for second hose exiting the pump.
- 253147 Easy Key Replacement Kit

Repair Kits

- 918439 Ram Repair Kit
Kit contains O-rings, retaining rings, piston and bumper for 20 l, 3 in (76 mm) dual post ram.
- C31065 Wiper Seal Replacement Kit
Contains silicone coated round wiper seal with internal spring for 20 l ram plate.
- 241782 Pump Repair Kit
For Check-Mate pump
- 288511 Finned Platen assembly
- 288512 Smooth Platen assembly

Therm-O-Flow 200



Accessories

- 253559 Drum Low and Drum Empty Sensor Kit
Signals when drum changes are needed.
- 233559 Vent Hood Kit
Exhaust material vapors with vent hood and facility ventilation system.
- 253147 Easy Key Replacement Kit
- 918397 Drum Clam Shell Used to reinforce fiber drums.
- 918395 Heavy Duty Drum Clamp
Centers, supports, and holds drum during ram removal.
- C32463 Saddle Clamps. Centers drum on base for raising and lowering of rams.

- 115694 Drip Tray Shield
Used to retain any material drips from heated plates while changing drums.
- 234966 Hose Support Spring Kit. Mounts to cross bar on ram.
- 253283 Hose Hanger Spring Kit.
Mounted by customer to hang hose overhead without kinking.
- 15H367 Shield, Accessory, TOF 200

Accessories for all Therm-O-Flow units



Therm-O-Flow System Accessories

- 255372 4-zone Expansion Box
Adds 4 heated zones to a Therm-O-Flow 20 or 200 system
- 253547 Light Tower Kit
Indicates alarms and drum low/drum empty sensors to reduce downtime.
- 253548 Maintenance Call Button Kit
Signals maintenance crew to maximize productivity.
- 253567 Discrete I/O Kit
Discrete I/O feature provides remote control inputs and outputs for automation.
- 253566 Ethernet Connection Kit
Remote reporting through Ethernet connection includes material totalizers, setup replication, system alarm log, and custom language capability.

Applicators & Dispense Valves

- 249515 Manual Gun, Top Feed, 230V
- 249514 Manual Gun, Bottom Feed, 230V
- 249513 Manual Gun, Top Feed, Electric Switch, 230V
- 249512 Manual Gun, Bottom Feed, Electric Switch, 230V
- 297273 Manual Gun, Top Feed, Swirl, 0.030 Orifice, 230V
- 297274 Manual Gun, Bottom Feed, Swirl, 0.030 Orifice, 230V
- 297266 Automatic Swirl Dispense Valve, 0.030 Orifice, 230V

Air-Operated Heated Dispense Valve

- 297261 Automatic Swirl Dispense Valve, 0.030 Orifice, 230V
Air Operated Snuff-Back Heated Dispense Valve
- 243694 Automatic Dispense Valve, 230V.
Air Operated Heated Dispense Valve
- 244951 Automatic Dispense Valve, 230V.
Air Operated High Flow Heated Dispense Valve
- 244909 Automatic Dispense Valve, 230V.
Air Operated Snuff-Back Heated Dispense Valve
- 243701 45 in Distribution Header With Valve, 230V

Flow Control & Manifolds

- 243700 Heated Air Operated Mastic Pressure Regulator, 230V
- 243656 23:1 Heated Pressure Compensator Valve, 230V
- 243657 51:1 Heated Pressure Compensator Valve, 230V
- 243697 Heated Distribution Manifold, 230V
Includes (2) 3/4 npt(f) inlet check valves,
1 npt 4-ported manifold, (2) 1 in npt(f)
outlet gate valves, mounting bracket, 400w 230 VAC heaters,
RTD sensor and 8 pin connector box.
- 289208 Compact Heated Regulator

Accessory Controllers and Cables

- 243698 2-Zone Accessory Control Box
- 243699 4-Zone Accessory Control Box
- 120409 2.4 m cable, 16 pin to 16 pin extension cable.
Runs between controller and heated hose.
- 196313 4.5 m cable, 16 pin to 16 pin extension cable.
Runs between controller and heated hose.
- 196314 7.5 m cable, 16 pin to 16 pin extension cable.
Runs between controller and heated hose.
- 196315 4.5 m cable, 16 pin to 8 pin extension cable.
Runs between controller and heated accessory.
- 196316 7.5 m cable, 16 pin to 8 pin extension cable.
Runs between controller and heated accessory.
- 196317 4.5 m cable, 16 pin to (2) 8 pin extension cable.
Runs between controller and heated devices.
- 196318 7.5 m cable, 16 pin to (2) 8 pin extension cable.
Runs between controller and heated devices.

Heated Hoses

A wide variety of heated hoses are available.

See Therm-O-Flow Configurator Form (684055) for available hoses.

See Therm-O-Flow Configurator Form (684055)

Miscellaneous Accessories

- C58942 120 volt AC solenoid kit for heated double-acting air-operated valves.
Includes solenoid, 24 in high temp. Air tubes, air fittings and muffler.
- C59038 24 volt DC solenoid kit for heated double-acting air-operated valves.
Includes solenoid, 24 in high temp. Air tubes, air fittings and muffler.
- 243703 230 volt AC solenoid kit for heated double-acting air-operated valves.
Includes solenoid, 24 in high temp. Air tubes, air fittings and muffler.



ABOUT GRACO

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.

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