

Resin Transfer Molding Systems

Dispensing Equipment for RTM and Light RTM Applications



GlasCraft® RTM Systems

A full line of solutions for resin transfer molding

Resin transfer molding (RTM) is a closed mold manufacturing process. Finished parts are made by introducing polyester or vinyl ester resins into closed molds containing fiberglass, carbon or other reinforcements.

Whether your process is traditional RTM, Light RTM, Vacuum Infusion Process (VIP), Closed Cavity Bag Molding (CCBM), or other similar process, GlasCraft offers a complete line of RTM systems to fit your application.

GlasCraft RTM Systems provide control at low pressure – the key to successful Light RTM injection

- Engineered for low-pressure injection of polyester and vinyl ester resins
- Accu-Pressure sensor monitors and controls pressure
- Entry-level to automated, high-volume production models are available

Typical applications:

- Marine and watercraft
- Pool and spa
- Bathware
- Consumer products
- Automotive panels and parts
- Aircraft components

Touch-screen PLC

Programmable machine functions – from injection volume to catalyst ratio (depending on options)



Positive Feed Catalyst pump

Allows for infinite adjustment of catalyst percentage – no tools required

Air Purge/Solvent Flush

For quick, efficient maintenance cleaning

Accu-Pressure Sensor

- Regulates, monitors and controls injection pressure
- Stops material from dispensing if injection pressures go above the user set point
- Prevents molds from becoming over-pressured

Superior recirculation

- Allows resin and catalyst to cycle to the dispense head and back to the containers, unmixed
- Keeps pigments and fillers suspended in the resin
- Allows line to be de-gassed without wasting material

Spartan Dispense Head

Provides excellent mix of resin and catalyst, and trouble-free injection as well



Advanced features for automated, high-volume RTM production

Advanced GlasCraft models are available with the following:

Touch screen PLC

Programmable logic controller allows you to program injection volume and catalyst ratio settings. Reduces operator error. Results in less wasted material and improved productivity.

Programmable digital air/solvent flush

Flushes out the static mixer with a pre-programmed amount of solvent. Can be used in combination with the air purge function for extra cleaning power.

Programmable Automatic Catalyst (PAC)

Ideal for manufacturers of larger parts. PAC allows you to program and adjust catalyst ratios for the injection cycle. By reducing the catalyst required for the first infusion of material, and increasing the catalyst during the last part of the infusion cycle, the part cures at a more even rate.

Programmable Radio Frequency Identification tags (RFID)

Each mold in your plant gets a unique RFID tag that you program with specific parameters such as amount of resin required and a catalyst injection profile. The operator simply scans the tag and the machine automatically loads the pre-programmed settings. RFID tags eliminate operator error and programming errors, and save wasted material as well.

In addition, RFID tags provide your facility with unlimited programming potential. That's because the system only stores the current RFID tag's dispense parameters. Since all molding parameters are stored on each chip, you can have an unlimited number of RFID-tagged molds in your production facility.

Password Protected PLC

Spartan 3 PLC with PAC and RFID systems are designed with password protection so that operators cannot change mold settings and parameters.

Advantages of RTM

A growing number of companies are moving to closed mold processes because it offers many significant benefits:

- Less wasted material
- Faster gel and cure times
- Uniform part size and thickness
- Consistent material usage
- Finished surface on both sides
- Reduced VOC emissions – less environmental impact
- Higher glass content which results in lighter weight parts



Spartan



Spartan II Basic



Spartan II Deluxe



Spartan 3 PLC



Spartan 3 PLC with PAC



Spartan 3 PLC with PAC & RFID

| Feature | Entry level designed for RTM high-pressure injection | For all forms of closed molding | For all forms of automated closed molding | For all forms of automated closed molding with touch-screen programming | For all forms of high-volume, automated closed molding | For all forms of closed molding; designed to simplify high-volume production when numerous mold sizes are used |
|--|--|---------------------------------|---|---|--|--|
| Complete recirculation | • | • | • | • | • | • |
| Pneumatic trigger | • | • | • | • | • | • |
| Air/Solvent flush | • | • | • | • | • | • |
| Low-pressure injection | • | • | • | • | • | • |
| Spartan dispense head | • | • | • | • | • | • |
| Positive feed SSP catalyst slave pump | • | • | • | • | • | • |
| Stroke counter | | • | • | • | • | • |
| Auto-valve ready | | • | • | • | • | • |
| Low-pressure injection with Accu-Pressure | | • | • | • | • | • |
| User-friendly control panel | | • | • | • | • | • |
| Dispense timer | | | • | • | • | • |
| Adjustable independent solvent flush | | | • | • | • | • |
| Independent air flush toggle switch | | | • | • | • | • |
| Adjustable gel timer | | | • | | | |
| Touch-screen programmable | | | | • | • | • |
| 30 programmable injection settings | | | | • | • | • |
| Programmable digital air/solvent flush | | | | • | • | • |
| Programmable automatic catalyst | | | | | • | • |
| Programmable radio frequency identification tags | | | | | | • |
| Unlimited programming | | | | | | • |
| Password protected | | | | | | • |

Ordering Information

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|----------|-------------------|----------|----------------------------|
| 21650-00 | Spartan | 23280-02 | Spartan 3 PLC |
| 23200-00 | Spartan II Basic | 23280-00 | Spartan 3 PLC w/PAC |
| 23240-00 | Spartan II Deluxe | 23280-01 | Spartan 3 PLC w/PAC & RFID |

Specifications

| | |
|------------------------|--|
| Air consumption | 35 cfm @ 100 psi (991 lpm @ 6.8 bar) at maximum pump output |
| Material pump capacity | 2.5 gpm (9.5 lpm) |
| Pump output | .05 gal per cycle 20 cycles = 1 gal 5 cycles = 1 liter |
| Max Output Pressure | 1,300 psi (89 bar, 8.9MPa) |
| Catalyst Range | 0.5% to 3.5% |

Repair Kits

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|-------------------------|--------------------------|
| Catalyst Pump | |
| LPA-190-RK | Complete rebuild kit |
| LPA-190-SK | Seal kit |
| Air Motor (5-in) | |
| 20101-00 | Complete service kit |
| 20107-00 | Pilot valve kit |
| 20106-00 | Main valve kit |
| 20105-00 | Gasket kit |
| 20104-00 | Stroke signal repair kit |
| 20103-00 | Rod seal kit |
| 20102-00 | Piston rod seal kit |

Fluid Section

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|----------|---------------------|
| 21570-00 | 5:1/11:1 Repair kit |
|----------|---------------------|

Check Valves

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|----------|-------------------------------|
| 21675-00 | Resin check valve |
| 21664-00 | Solvent/air purge check valve |
| 23547-01 | Catalyst check valve |
| 21676-00 | Washer, crush, nylon, .52 ID |
| 22904-00 | Stem check valve |
| 21044-02 | Silicone o-ring |
| 23540-00 | Catalyst body check valve |
| 22906-00 | Washer, crush, nylon, ¼ ID |
| 23524-01 | Compression spring |
| 22908-00 | Round nut |

Mixer

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|----------|--------------|
| 20625-00 | Static mixer |
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Call today for product information or to request a demonstration.

800-746-1334 or visit us at www.graco.com.