



ROBOTICS, Inc.

APPLICATION: RTV Gasketing Computer Hard Drive Cover

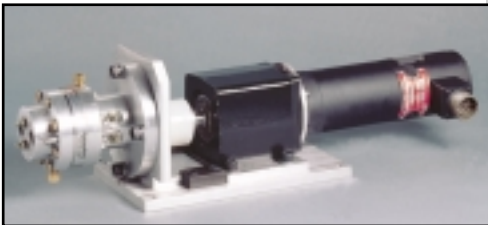
Objective

The customer required an automated system to dispense a silicon gasket around the perimeter of a computer hard drive cover. The silicon gasket, a two-part material, is a mix ratio composition of 1:8.25 by volume and 1:10 by weight.

System Solution

Robotics Inc.'s solution is our Program-a-Flow (PAF) DataFlow™, Custom Dual Head Dynamic Mixer, GC1000 Gantry, and a custom bulk material supply system.

The PAF DataFlow™ controls the proportioning of the 2 materials which are mixed by the Robotics dynamic mixer in the in-line mixing chamber just before dispensing. The GC1000 Gantry robot is ideal for gasketing on the hard drive covers as it allows for high accuracy and high volume on small to medium sized parts.



PAF DataFlow™ Metering Pumps in 0.168 cc/rev and 0.0146 cc/rev.



Bulk material supply system consists of dual 5 gal bulk pumps with auto cross-over (left) and two stainless steel 2.5 gal pressure pots (above).

Key System Features: PAF DataFlow™

>General Aspects:

- Touch screen industrial PC
- User defined start-up state and mode
- Quality control data tracking
- Flexibility to handle off ratio materials

>Operator Display:

- Date and time, Process information, Unit description, Material description

-Operation mode control:

- Manual and Auto modes

-Fault display:

- Status of drive cards is monitored; faults shutdown system; errors displayed as numbers or with a short description; critical faults for high or low pressure of materials; emergency stops for relay failure, drive faults on either pump, or external event stops

-Manual Operation:

- Operator can vary flow rates while material is not flowing (rate display in cc/min), voltage varies between 0 and 10 VDC, flow rate is backed up on hard drive to prevent data loss



>Pump Parameters:

- PAF DataFlow™ adapts to different mix ratios for two-part material dispensing
- Material ratio mix is designed around the motor speed and material volume for improved accuracy

>Pressure Parameters:

- Monitor pressure values, status messages for operator, trigger alarm flexibility
- User definable alarm activation and max. pressure differential

>Style Parameters:

- Store up to 30 different style configurations
- Set up individual style for data collection for QC tests
- Define min. and max. for total volume, material A and B pressures

>Data Collection Parameters:

- Download historical part data
- Specify method of start and stop of data transfers
- Set time when old data files are purged
- Ethernet capability

>Key Lockout:

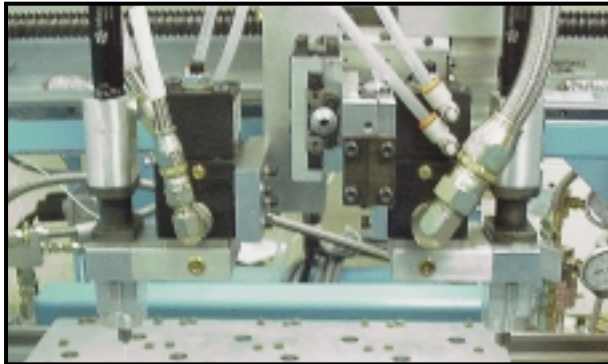
- Lockout all control functions on system configuration menu
- Prevent unauthorized personnel from altering settings
- All control features, values, and parameters continue to function and be monitored

>SPC Data Collection Features:

- Data collected to a 6M hard drive
- Data points monitored by system: Job no./file index; part index; date (MM/DD/YYYY); week number; time (HH:MM:SS); style number; total volume (all vol in cc); volume of materials A and B; min., avg., and max. pressure of material A during dispensing (in psig); min., avg., and max. pressure of material B during dispensing; cycle faults; QC test results

Key System Features: Dual Head Dynamic Mixer

- Significant reduction in per part production time
- Dispensing from each head is consistent and accurate
- Reduces need for multiple dispensing systems and additional floor space
- Can be configured for different part spacings
- Implemented with various dispensing needles and nozzles
- May be utilized with a wide range of heavy filled and unfilled materials
- Verified to handle mix ratios from 1:1 to 1:8.25
- Designed to insure material mix without affecting or modifying material property



The dynamic mixer is designed to mix multi-part materials efficiently, accurately, and quickly.

Information

Robotics, Inc. has designed and built numerous dispensing applications for a variety of industries. For more information on this application or other products and services, contact a Robotics Inc. Sales Representative:



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Key System Features: GC1000 Gantry

- Gantry style system with 3 axes of motion (X, Y, Z) via AC servo driven ball screws and designed for operation at speeds up to 600 inches/minute
- Powerful PMAC Lite motion controller with Motorola DSP allows true "S-curve" acceleration and deceleration which lets our gantry obtain high accelerations without "jerks"
- 3-axis system design gives accurate dispensing of adhesives and sealants with repeatability of + or - 0.0005 inch and a resolution of 0.0005 inch
- **Smart Operation Panel (SOP):** allows the operator to interact with the system control; located on door of control cabinet; has backlit LCD display and keypad; displays operating information, fault messages, and descriptions of 6 function keys located below the display
- **"Jog" pendant:** hand held control that allows activation of commonly used manual and automatic functions; mainly for maneuvering robot in manual mode, controlling pallet cycling, and initiating or stopping dispensing cycles during auto mode

Systems & Support

Robotics, Inc. has decades of experience designing and building automated dispensing systems. We provide complete system solutions, including start-up and installation assistance, training, field service support, and complete documentation. Depending on your specific project considerations, Robotics Inc. staff will design and build a system that is right for you.

Since 1971, Robotics Inc. has designed, built, and supported automated dispensing around the world!

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