

General Information

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Overview

Introduction

The XyflexPro System manual is intended as a reference for all personnel who will be operating, programming and performing routine maintenance on the system.

It contains several individual guides, each geared to a specific aspect of the system from Operation and Programming through Maintenance and Repair.

Each guide contains information that is intended to assure safe and reliable system operation as well as maximum productivity.

It is recommended that all personnel who operate the XyflexPro system familiarize themselves with the individual guides, and that they adhere to all safety precautions, warnings and cautions.

In This Chapter

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Customer Support Structure

Introduction

There are several ways to contact us if you should need assistance.

Technical Support

Speedline maintains a toll-free Customer Support Line for your convenience for obtaining Service, Parts, Training, or Technical Assistance. Simply call **1-800-737-8110** and follow the prompts.

Machine Serial Tag

You can help us support your system in a timely manor by having the machine model and serial number on hand when you call. This information is printed on the machine serial tag. The machine serial tag is attached to the rear pneumatic panel. A sample is shown in Figure 1-1.

Removal of this tag voids the system warranty.

SERIAL#

MODEL#

VOLTS HZ 50/60

MAX AMP LARGEST SINGLE LOAD A

AIR PRESSURE PSI/BAR 80-100/5.5-6.9

DATE OF MFG (M0/YR) /

Speedline Technologies, Inc. CAMALOT Div.

145 WARD HILL AVE
HAVERHILL, MA, 01835, U.S.A.


Cookson 

Figure 1-1

Technical Publications

This manual contains the latest available information at the time of system manufacture. We welcome your comments and suggestions. Should you find any discrepancies within these documents, please contact the Speedline Camalot Technical Publications Department.

You may contact us via E-Mail. Be sure to include a phone number where we may contact you. We will address all inquiries promptly.

Our E-Mail address is **CAMPUBS@speedline.cookson.com**

You may also contact us by phone during normal business hours at: 978-521-7337.

USA Offices

Speedline maintains a number of offices throughout the United States for your convenience in other business matters:

Office	Location
North East Regional Service Center	145 Ward Hill Avenue Haverhill, MA 01835 Phone: 978-373-3742 Fax: 978-556-7269
South East Regional Service Center	200 Technology Dr. Alpharetta, GA 30005 Phone: 770-475-6100 Fax: 770-442-1987
North Central Regional Service Center	580-A Tollgate Road Elgin, IL 60123 Phone: 847-695-5750 Fax: 847-289-3797
South West Regional Service Center	1111 W. North Carrier Parkway Grand Prairie, Tx 75050 Phone: 972-606-1900 Fax: 972-606-1700

System Description

Introduction

The XyflexPro system is a computer-controlled system for simultaneously dispensing a variety of materials in a single dispense zone.

Physical Description

The system control has a flat panel monitor with a trackball and keyboard each mounted on a pivotal shelf. The pivotal shelf permits the monitor or keyboard to be placed in a convenient position. This allows the operator working at any control to view the monitor screen while inspecting the functioning of a head or any part of the production process as the components move through the system.

Electronic servicing is done from the front of the system, electrical and facility servicing is done from the rear of the system. All panels and hoods are self contained with the system and special tools are utilized for controlled access of all serviceable areas.

Operating System and Program Software

The XyflexPro **Benchmark**® operating software is based on the Windows NT® operating system and incorporates fully networked system interfaces for remote diagnostics, permitting direct factory to factory interaction with systems and ensuring immediate assistance via a network or modem.

The system combines a security system with varying levels of access that cannot be bypassed by unauthorized users. Depending on access privileges, the system can be started up, files can be checked or modified, and the system can be run from an off-site location.

Existing dispense programs may be optimized where algorithms assign system resources against the component patterns to determine the most efficient operation of the system.

The graphical user interface provides hot spots on the image of the system where current status can be accessed. Pull down menus and dialogue boxes are utilized to enter necessary data, manually toggle input/output status, and obtain error handling and I/O status information.

Applications

Introduction

The XyflexPro system is used to dispense solder paste, epoxies, adhesives, glob top, dam and fill, or underfill materials for the electronics, automotive and medical industries. It can be used as a stand alone system, or in-line with other (but not limited to) **SMEMA** (Surface Mount Equipment Manufacturer's Association) compatible systems.

Surface Mount Operation

The XyflexPro Surface Mount System operates at a speed of up to 30,000 dots per hour and can dispense solder paste, adhesives, conductive epoxies. At the maximum rate of 30,000 dots per hour, placement accuracy is $\pm .003$ inch (± 75 microns). Repeatability is $\pm .002$ inch (± 50 microns) at 3 sigma.

Semiconductor Operation

The XyflexPro (configured for Semiconductor operation) System is heated, with contact heat and pump heat at temperatures ranging from 25 °C to 120 °C and is used for encapsulation and underfill.

The Small platform (7100) may be configured with up to two zones of heat as follows:

- Preheat Station and Dispense Station
- or**
- Dispense Station and Postheat Station

The Large platform (7200) may be configured with up to three zones of heat as follows:

- Preheat Station, Dispense Station, and Postheat Station

For stand alone operation, loaders and unloaders can be interfaced with the system.

Available System Options

Introduction

The XyflexPro has many options available to accommodate different dispense materials, improve throughput, and accuracy. Each option is described in this section.

Dot Dispense Unit

The Dot Dispense Unit is a high-speed precision-machined dispensing unit that mechanically compensates for board variations in the Z-axis. It is designed for accurate and highly-repeatable dispensing of surface mount epoxies, glues, and solder pastes through the use of different leadscrew and needle combinations and material syringes.

Line Dispense Unit

The Line Dispense Unit is a liquid and semiliquid, precision dispensing device. This dispensing unit is designed for encapsulation and underfill dispensing operations. Line dispense units are available in heated and unheated versions depending on the application and material.

645- Multi-Piston Pump

The 645 Multi-Piston Pump (dispense unit) is an electrically operated, heated, precision dispense unit. It provides accurate higher volume dispensing of high viscosity, abrasive materials utilized for encapsulation, underfill and cavity filling operations.

This dispense unit is a brushless servomotor driven type: a motor driven cam allows three pistons to alternately draw material from the supply syringe and then dispense the material through the needle.

Typical materials dispensed from a line unit require 20 PSI for underfill and 60 PSI for encapsulation. The dispense unit does not otherwise rely on air pressure to dispense. When the motor is activated, the stroke of the pistons mechanically displaces the material.

The dispense unit heater with digital controller provides a uniformly heated pump body for heating material to a predetermined temperature before dispensing.

805- 6 oz. Cartridge

The 805 - 6 oz. Cartridge is a dispense holder that is attached to a bracket and mounts to the Z-axis. It can hold up to 6 oz. of material in the syringe. The material flows through a tubing line and into the dispense unit. This cartridge allows the operator to dispense large quantities of material for encapsulation.

Heated Chucks

Systems equipped with heated chucks are used for heating the substrate to a predetermined temperature. These chucks may be configured as Preheat, Dispense, and Postheat stations, depending on your application. Temperature control for the chucks is provided by temperature controllers. The chuck heat is set using the system software.

811 and 812 Low Level Liquid Sense

The 811 and 812 Low Level Liquid Sense informs the operator when the syringe is empty. When the syringe empty indication is sent, the system will not allow any upstream boards to enter the machine. All internal work in progress completes the dispensing cycle and is sent downstream. When the system completes the dispensing cycle, the blue light will turn amber on the light tower.

The Low Level Liquid Sense is an electrical component that is enabled via the installation software before shipment. When this option is installed, the software counter system is overridden.

725- Weight Scale

The 725 Weight Scale is used to ensure exactness and consistency in the amount of material dispensed. Special software automatically performs adjustments to the output rate of the pump to ensure uniform output.

Dual-Head Option

The Dual-Head option allows for two Dispense Units and/or Multi-Piston pumps to be mounted on the Z-axis. This option is currently only available on the Large XyflexPro platform (7200 model). This provides the ability to dispense two different materials such as SMD adhesive and solder paste. Additionally, the system may be configured with different foot orientation and dot sizes for SMT dispensing.

When the system is equipped with a dual-head option it is important to note the following dispense areas:

- System equipped with two Dispense Units having the **same** configuration (this includes the same foot orientation and needle gauge)
Dispense Area - 22" X 22"
 - System equipped with two **different** Dispense Units (this includes different foot orientation and needle gauge)
Dispense Area - 14.7" X 22"
 - System equipped with only one pump
Dispense Area - 18" X 22"
-

Installed System Options

Introduction

When the system is shipped from the factory, each option that is installed is on your machine is listed within the software. The **Machine Options** view may be used by a service technician to aid in troubleshooting when the system needs repair.

Viewing the Installed Options

View the installed options for your machine as follows:



Attention

This procedure assumes that the system is up and running. Refer to the Chapter titled - **Startup and Shutdown**.

1. Select **V**iew from the menu bar. A drop down list appears, see Figure 1-2.

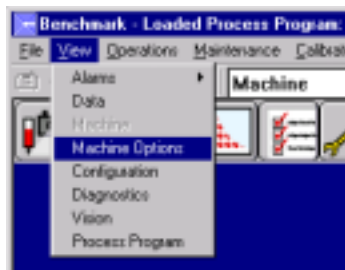


Figure 1-2

2. Select **M**achine Options from the drop down list. A list of installed machine options appears, see Figure 1-3.

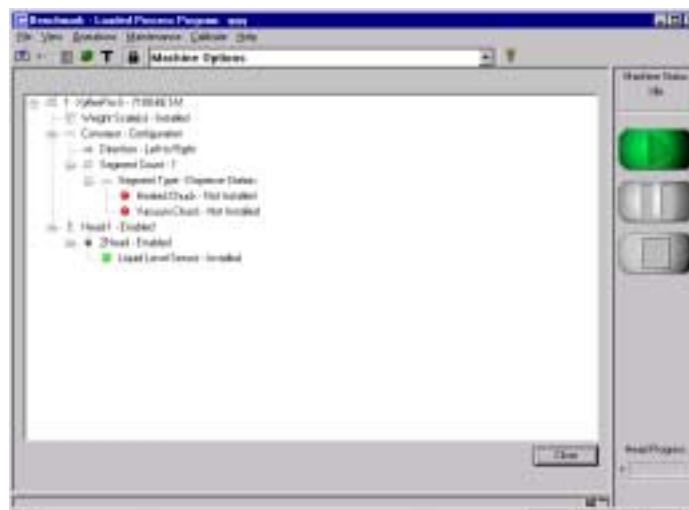


Figure 1-3

Speedline Technologies, Inc. Camalot Division Warranty Terms and Conditions

Warranties

Seller warrants that each item of its own manufacture delivered hereunder shall, at the time of delivery and for a period of twelve (12) months thereafter, be free from defects in materials and workmanship; and if any such item shall prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, upon examination by Seller or its authorized representative, then Seller shall repair or replace, at its sole option, such defective item at its own expense; provided however, that the Buyer shall be required to ship each such defective item freight prepaid to Seller's plant. The warranty on components not manufactured by Seller, but a part of Seller's systems, is limited to the warranty provided by the original manufacturer of said components to the extent, and only to the extent, that such original manufacturer actually honors such warranty. (Seller having no independent obligation as to such warranty.)

Warranty Disclaimer

THE FOREGOING WARRANTIES ARE THE SOLE AND EXCLUSIVE WARRANTIES GIVEN BY SELLER IN CONNECTION WITH THIS AGREEMENT, EXPRESSED OR IMPLIED, AND SELLER DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT PROMISE THAT THE PRODUCT IS ERROR-FREE OR WILL OPERATE WITHOUT INTERRUPTION. ALL WARRANTIES ARE EXPRESSLY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE ITEMS AS SET FORTH HEREINABOVE, AND IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BY REASON OF ANY BREACH OF WARRANTY OR DEFECT IN MATERIAL OR WORKMANSHIP.

Governing Law

These terms and conditions shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts.

Quality Assurance

Introduction

Every XyflexPro system that is shipped from the factory is tested for functionality and accuracy by a Quality technician. The XyflexPro system is identified by a serial number located on the machine serial number tag. Each system will have its own set of documentation. The set of documentation is initialed and signed by the technician. These documents should remain within this manual or with the appropriate system in case service is required.

Documentation

The following Quality Assurance documents are shipped with every XyflexPro System:

- Inspection Sheet (3-pages)
 - Data Sheet (2-pages)
 - Accuracy Sheet
 - Heat Profiles (if equipped with heated chucks)
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