

SECTION 1 – HEALTH, SAFETY AND ENVIRONMENTAL

INTRODUCTION

This chapter covers safety information pertaining to the spin processor system. The spin processor uses high voltage electrical power, mechanical motion, and varying temperatures in the processing of semiconductors. Safety precautions **MUST** be followed when servicing or maintaining the spin processor system.

Service and maintenance personnel should be trained in:

- Electrical safety
- Hazardous Chemical Handling
- Mechanical Motion

NOTE: Only LTC factory-trained personnel should service the spin processor system.

Some maintenance tasks may require more than one person to perform. The presence of potentially hazardous chemicals may require two or more workers to safely complete the tasks. Whenever possible turn off and lockout gases, chemical delivery valves, and electrical power before service or maintenance is performed.

Possible hazards associated with the spin processor system are:

- Electrical shock
- Inhalation, exposure, and skin contact with solvent chemicals
- Fire
- Mechanical hazards

Safety procedures associated with the spin processor are noted within this section and throughout this volume. The OEM components for your system also contain specific safety instructions, which are provided in their respective documentation.

Each spin processor is configured to use specific chemical materials in its standard process, as well as facility gases and fluids for certain maintenance tasks. These chemical materials may be hazardous, flammable and/or toxic and require careful handling. Safe handling procedures for these chemical materials are discussed in this manual.

Laurell Technologies Corporation is not liable for damages resulting from improper installation or misuse of their spin processor system. Every operator and service person must read and thoroughly understand the operation and maintenance manuals, as well as any additional information, provided by Laurell with respect to this product.

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1.1 LAURELL TECHNOLOGIES ENVIRONMENTAL, HEALTH AND SAFETY POLICY

Laurell Technologies maintains an EHS (Environmental, Health and Safety) policy and will periodically notify its customers of new issues, which may affect the way in which its equipment is being used. All technical information regarding each customer and process use is entered into the company wide database. Hard copy and electronic backups are maintained as part of the company's vital information and recovery policy. This information is reviewed and updated if necessary on a daily basis.

1.2 HAZARD WARNINGS

Potential safety hazards associated with the spin processor system are clearly labeled on the equipment and in this manual using the preferred hazard-warning trilogy of alert words, pictograms, and avoidance techniques. This hazard-warning system is in accordance with ANSI Standard Z535 and OSHA 29 CFR 1910.144-147. The labels will be contained within a box border and will apply to the text immediately following the warning. (See Figure # 1-2A)

Hazard Alert Labels are subdivided into three areas:

- The Level of Hazard Intensity
- Hazard Pictograms
- Hazard Avoidance Text

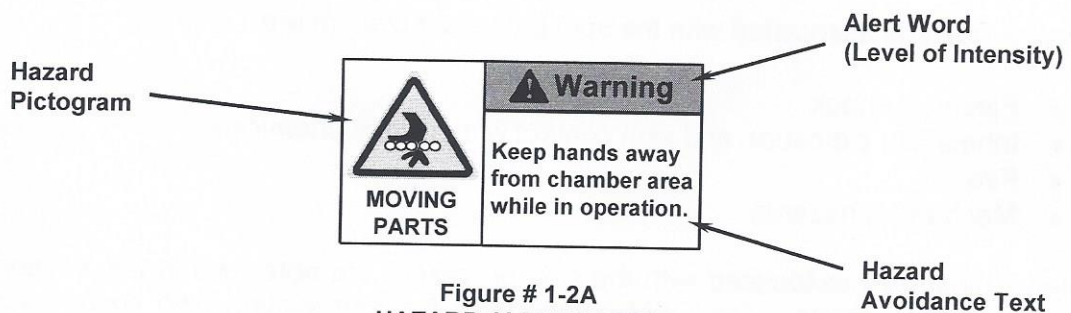


Figure # 1-2A
HAZARD ALERT LABEL

The spin processor manual uses this system of hazard warnings before each service or maintenance procedure that may involve hazards to personnel. When working on OEM sub-systems please refer to the manufacturer's documentation for specific hazard warnings. READ and UNDERSTAND precautions and hazard warnings BEFORE performing any service or maintenance task.

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1.2.1 LEVEL OF HAZARD INTENSITY

Alert words are used to communicate the level of hazard intensity. The hazard alerts provided in the manual utilize some or all of the following key words:

“CAUTION”- (Depicted by black lettering on a yellow background) - This indicates potential hazard or unsafe practices or operations that could cause damage to the tool or product. Proper precautions should be taken. (See Figure # 1-2B)



Figure # 1-2B
CAUTION ALERT

“WARNING” - (Depicted by black lettering on an orange background) - This indicates that an immediate hazard exists and special precautions are necessary. Loss of life or limb may occur if WARNING labels are not heeded. (See Figure # 1-2C)

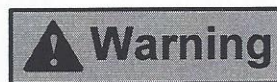


Figure # 1-2C
WARNING ALERT

“DANGER” - (Depicted by black lettering on a red background) - This indicates that an immediate hazard exists, which, if not avoided, will result in serious injury or death. (Typically not used on Laurell spin processor) (See Figure # 1-2D)



Figure # 1-2D
DANGER ALERT

NOTE: All Danger, Warning, and Cautionary notices must be carefully read, thoroughly understood and strictly observed. The users of this product assume the responsibility of implementing all Governmental, Federal, State, and Local safety regulations applicable to the use of this product.

1.2.2 HAZARD PICTOGRAMS

Hazard Pictograms (pictorial hazard alert symbols/icons) are used to visually convey the nature, avoidance technique, and possible consequences of a given hazard, if the instructions are not followed. Pictograms help assure that non-English speaking persons are alerted to potential hazards and how the hazard may be avoided.

Laurell Technologies Corporation has adopted a series of pictograms used to identify various hazards, which may be present in the spin processor. These icons appear in the manual and on the equipment wherever exposure to hazards is possible. Several may be used in each manual; however, not all pictograms are applicable to each system. Figure # 1-2E depicts some or all of the pictograms used on Laurell spin processors. Service and maintenance personnel should become familiar with all of the pictograms shown so that the hazard represented by each will be recognized on sight.

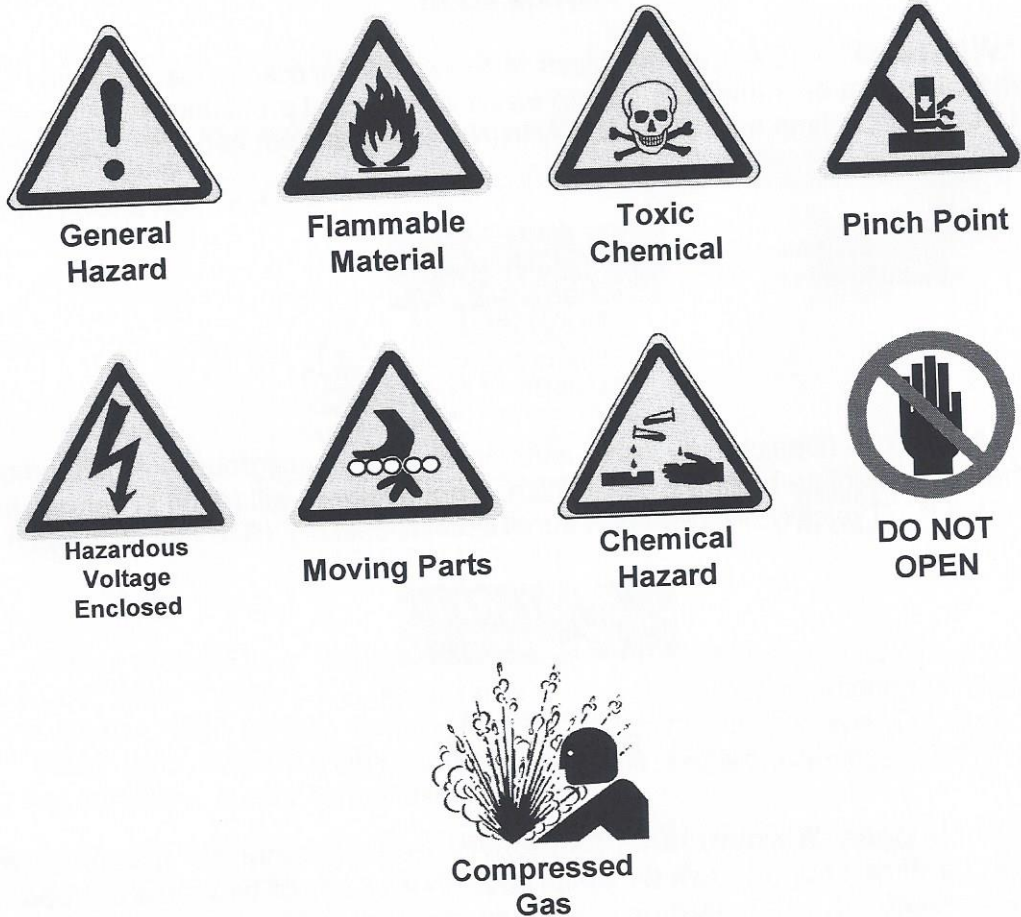


Figure # 1-2E
HAZARD PICTOGRAMS

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1.2.3 HAZARD AVOIDANCE TEXT

Text is also used to convey methods of avoiding certain hazards and the consequences that will occur if proper precautions are not taken. (See Figure # 1-2F)

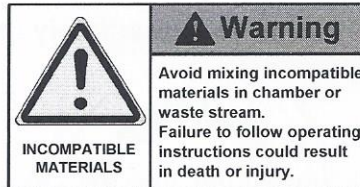


Figure # 1-2F
AVOIDANCE TEXT

1.3 EMERGENCY SHUTDOWN OPTION (STATION INSTALLATIONS ONLY)

This spin processor is **NOT** equipped with its own EMO (Emergency Machine Off) circuit; it should be powered by a system with EMO capability. If your safety department or policies allow: simply having the incoming power plug far enough away from the spin processor, properly labeled and fully accessible may be sufficient.

The EMO button area should be located within easy reach of the spin processor operator. In the event of an emergency, pressing the EMO button will remove all power to the spin processor.

After the EMO circuit has been reset and power has been restored, the spin processor will automatically reset. The spin processor will revert to the normal "power up" condition. The motor will revert to a "stopped" condition, and any process that was being performed when the EMO occurred will have been terminated. Any wafer that was being processed during this shutdown may have incurred some damage and should be treated as such.

By following the normal steps, described in Section 3.6, for initiating the spin processor, a new process may be started.

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