

SEMI E47-0301 (Reapproved 0512) SPECIFICATION FOR 150 mm/200 mm POD HANDLES

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NOTICE: This Standard or Safety Guideline has an Inactive Status because the conditions to maintain Current Status have not been met. Inactive Standards or Safety Guidelines are available from SEMI and continue to be valid for use.

NOTICE: This Document was reapproved with minor editorial changes.

1 Purpose

1.1 This Specification provides a unified form and location for pod handles to enable automatic pod handling.

2 Scope

2.1 This Specification defines the dimensions and location of handles on 150 mm/200 mm pod. These provide automatic handling and take into consideration manual handling. The design of individual manual handles is open to be accomplished within the dimensional limitations of the Standard.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 This Specification applies only to automatic handling of the pod with a SMIF interface in the horizontal plane (see limitations of SEMI E19.3 and E19.4). Dimensional restrictions for manual handling are given in SEMI E15 and SEMI T4.

4 Referenced Standards and Documents

4.1 SEMI Standards and Safety Guidelines

SEMI E15 — Specification for Tool Load Port

SEMI E19.3 — 150 mm Standard Mechanical Interface (SMIF)

SEMI E19.4 — 200 mm Standard Mechanical Interface (SMIF)

SEMI E47.1 — Mechanical Specification for Boxes and Pods Used to Transport and Store 300 mm Wafers

SEMI T4 — Specification for 150 mm and 200 mm Pod Identification Dimensions

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

5 Terminology

5.1 Definitions

5.1.1 *box* — a protective portable container for a cassette and/or substrate(s).

5.1.2 *cassette* — an open structure that holds one or more substrates (wafer, masks, etc.).

5.1.3 *handle of a pod* — a mechanical aid designed for automatic handling of a pod, which may also be used for manual handling.

5.1.4 *handling area* — minimum free space around the pod for automatic handling.

5.1.5 *handling of a pod* — automatic and manual movement and/or placement of a pod.

5.1.6 *orientation notch* — notch located at the pod handles to allow sensing the orientation of the pod. See Figure 1.

5.1.7 *pod* — a box having a standard mechanical interface (SMIF). [SEMI E19]

5.1.8 *position notch* — notch located at the center lines of the pod handles to allow positioning. See Figure 1 (PN1–PN4).

5.1.9 *standard mechanical interface (SMIF)* — the interface plane between a pod and another minienvironment per SEMI E19.

6 Requirements

6.1 Handling Dimensions: the handling dimensions for 150 and 200 mm pods shall be per Table 1 (see Figure 1 for dimensional locations).

6.2 A8 is given as a minimum and can be extended up to A1.

6.3 Number of handles shall be:

6.3.1 four (H1–H4 in Figure 2) or

6.3.2 two (H1 and H3) in Figure 2.

6.4 The handling area is defined by A5 (which is in reference to A1) and by B2. B1 is the minimum distance between the interface plane and the nearest extension of the handle.

6.5 The orientation possibilities of the pod are given in Figure 2 and Table 2.

6.6 An optional handle to be placed at the top of the pod is specified in SEMI E47.1 (§ 6.9, Figure 12, and Table 1). If used for 150 or 200 mm pods, this ‘top robotic handling flange’ has to meet the required dimensions as specified in SEMI E47.1 (see Figure 12 of SEMI E47.1). Its center is to be placed above the center of the cassette in the pod with the two orientation notches at the side where the cassette is accessed to remove wafers. The orientation possibilities of the pod are then the same as described in § 6.5 above and Table 2.

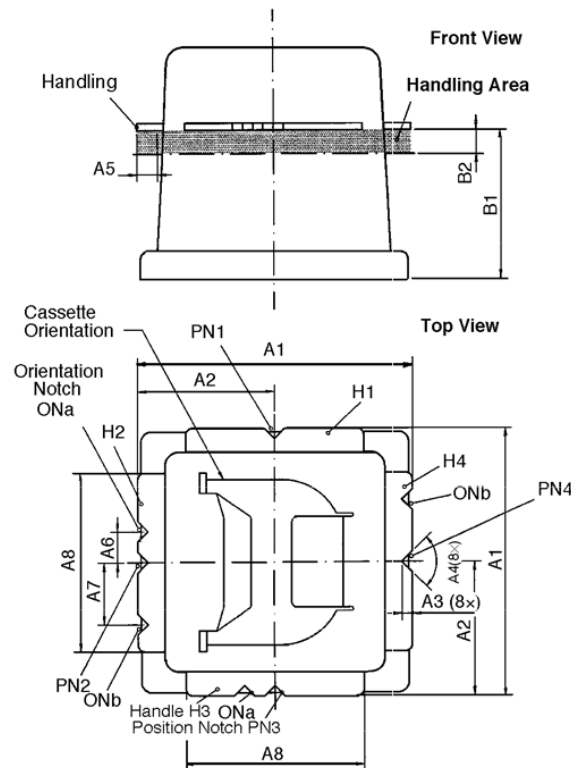


Figure 1
Pod Handling Terminology and Dimensions