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(54) Title: SEMICONDUCTOR PROCESSING APPARATUS HAVING LINEAR CONVEYOR SYSTEM

(57) Abstract

A transport system for manipulating a semiconductor wafer in a processing tool (10) is set forth. The system includes a transport unit guide (66) disposed within the processing tool (10) for supporting a wafer transfer unit (61) as the unit moves between a first position and a second position. The transport unit guide (66) comprises a frame (65), a lateral guide rail (63) mounted on the frame (65), and a series of magnetic segments (71, 74) arranged upon the transport unit guide (66) proximate the lateral guide rail (63). The wafer transfer unit (62) includes a tram (84) translatably attached to the lateral guide rail (63) and a wafer transfer arm assembly (86) for manipulating the semiconductor wafer. An electromagnet is mounted on the tram (84) in cooperative relation with the magnetic segments (71, 74) for moving the transfer unit (62) along the guide rail (63). Actuators are used for controlling the position of the transfer unit (62) and transfer arm assembly (86), and sensors (91) are used for determining the position of the transfer unit (62) and transfer arm assembly (86). A controller (101) is disposed remote of the wafer transfer unit (62) and directs the movement of the transfer unit (62) and transfer arm assembly (86) in response to the sensors (91) using the actuators. A communication link is established between the actuators, sensors and controller (101). Preferably, the communication link is a fiber optic link.

