

CLAIMS

1. ~~Position drift detection apparatus~~ Apparatus configured to detect position drift, position drift being a gradual drift over time from a desired position of a machine component in a machine operation using a robot arm, the robot arm being for operation on a semiconductor substrate, the robot arm and the semiconductor substrate being configured for relative movement therebetween, the apparatus comprising:
 - an input for receiving an input signal from a sensor mounted on the robot arm;
 - a detector for detecting, from the input signal, a detection of there being a predefined distance between the robot arm and the semiconductor substrate;wherein
the apparatus is configured to determine, from the detection, whether there has been position drift.
2. The apparatus of claim 1, configured to detect whether there has been position drift by deriving motion information relating to an action of relative movement between the robot arm and the semiconductor substrate, the motion information relating to motion from a reference position to the predefined distance between the robot arm and the semiconductor substrate, and by comparing the motion information with expected information for the action of relative movement.
3. The apparatus of claim 2, configured to detect the reference position as a position of one of the robot arm and the semiconductor substrate when the one of the robot arm and the semiconductor substrate is stationary prior to relative movement being effected therebetween for the robot arm to operate on the semiconductor substrate.

4. The apparatus of claim 3, configured to detect the reference position when the robot arm is stationary prior to it being moved to operate on the semiconductor substrate.
- 5 5. The apparatus of claim 4, configured to detect the reference position from a second input signal received from a second sensor mounted on the robot arm.
6. The apparatus of any of claims 2 to 5, configured to derive the motion information as timing information relating to a period of time for the robot arm to
10 move from the reference position to the predefined distance from the semiconductor substrate.
7. The apparatus of any of claims 2 to 6, configured to derive the motion information as distance information relating to a distance of travel for the robot arm
15 to move from the reference position to the predefined distance from the semiconductor substrate.
8. The apparatus of any preceding claim, configured to detect, from the input signal, detection of the predefined distance between the robot arm and the
20 semiconductor substrate when relative movement is effected therebetween in a direction transverse or generally transverse a plane of the substrate.
9. The apparatus of any preceding claim, configured to receive the input signal as a signal indicating the sensor is in alignment with an edge of the semiconductor
25 substrate.
10. A method of detecting position drift, position drift being a gradual drift over time from a desired position of a machine component in a machine operation using a robot arm, the robot arm being for operation on a semiconductor substrate, the

robot arm and the semiconductor substrate configured for relative movement therebetween, the method comprising:

receiving an input signal from a sensor mounted on the robot arm;

detecting, from the input signal, a detection of there being a predefined

5 distance between the robot arm and the semiconductor substrate; and

determining, from the detection, whether there has been position drift.