Claims:

1. Apparatus for handling substrates of different sizes, comprising:

a pair of end effectors having a first set of contact pads configured to support a substrate having a first size and a second set of contact pads configured to support a substrate having a second size, smaller than the first size, wherein the pair of end effectors are coupled to a support plate and are rotatable with respect to the support plate, and wherein rotation of the end effectors positions either the first set of contact pads or the second set of contact pads for receiving a substrate.

2. The apparatus of claim 1, wherein the support plate is configured as a wrist of a substrate transfer robot and coupled to an arm of the substrate transfer robot.

3. The apparatus of claim 1, wherein the first set of contact pads and second set of contact pads are edge grip pads.

4. The apparatus of claim 1, wherein the first set of contact pads and the second set of contact pads are positioned at an angle to each other, with respect to an elongate axis of each respective end effector of up to 90 degrees.

5. The apparatus of any one of claims 1 to 4, wherein two contact pads are disposed on each end effector to define the first set of contact pads.

6. The apparatus of any one of claims 1 to 4, wherein two contract pads are disposed on each end effector to define the second set of contact pads.

7. The apparatus of any one of claims 1 to 4, wherein the second set of contact pads are disposed at a location on each end effector between a location of adjacent contact pads of the first set of contact pads.

8. A multi-chamber substrate processing tool, comprising:

a factory interface (FI) in selective communication with a load lock chamber;

a first front opening unified pod (FOUP) disposed on or coupled to the FI and configured to provide substrates having a first size to or from the multi-chamber substrate processing tool;

a second FOUP disposed on or coupled to the FI and configured to provide substrates having a second size, smaller than the first size, to or from the multi-chamber substrate processing tool; and

a robot disposed in the factory interface, wherein the robot includes the apparatus of any one of claims 1, 3, or 4.

9. The multi-chamber substrate processing tool of claim 8, wherein two contact pads are disposed on each end effector to define the first set of contact pads configured and two contract pads are disposed on each end effector to define the second set of contact pads.

10. A method of handling substrates of different sizes, comprising:

rotating a pair of end effectors of a substrate handling robot in a tool configured to process substrates to a first position to support a substrate having a first size; and

rotating the pair of end effectors to a second position to support a substrate having a second size, wherein pair of end effectors include a first set of contact pads to support the substrate having the first size and a second set of contact pads to support the substrate having the second size.

11. The method of claim 10, further comprising releasing the substrate having the first size prior to rotating the pair of end effectors to the second position.

12. The method of claim 11, further comprising picking up the substrate having the first size prior to releasing the substrate having the first size.

13. The method of any one of claims 10 to 12, wherein rotating the pair of end effectors to the second position includes rotating the pair of end effectors up to 90 degrees with respect to an elongate axis of each of the respective end effectors.