WHAT IS CLAIMED IS:

1. A substrate processing apparatus comprising:

a table for supporting a substrate;

a pad holder for holding a polishing pad for polishing the substrate supported to the table;

a swing mechanism configured to swing the pad holder;

a supporting member for supporting the polishing pad swung to outside the table by the swing mechanism;

a measuring instrument configured to measure a diameter of the substrate; and

a driving mechanism for adjusting a position of the supporting member with respect to the substrate supported to the table according to the diameter of the substrate measured by the measuring instrument,

wherein the measuring instrument includes at least three centering mechanisms, the at least three centering mechanisms push the substrate supported to the table in a center direction of the table for positioning, and the measuring instrument is configured to calculate the diameter of the substrate based on a positioning result of the substrate with the centering mechanisms,

wherein the at least three centering mechanisms each include a shaft and a centering member, the shafts are disposed around the table and movable in a direction of approaching the table and a direction of away from the table, and the centering members are mounted to the shafts, and

the measuring instrument is configured to calculate the diameter of the substrate based on movement amounts of the shafts when the substrate is positioned.

2. The substrate processing apparatus according to claim 1, wherein

the supporting member includes a first supporting member and a second supporting member, the first supporting member is disposed on a swing path of the polishing pad outside the table, and the second supporting member is disposed on a swing path of the polishing pad on a side opposite to the first supporting member between which the table is interposed.

3. The substrate processing apparatus according to claim 2, wherein

the first supporting member and the second supporting member each have a support surface, and the support surfaces are configured to support an entire polishing surface of the polishing pad in contact with the substrate.

4. A substrate processing apparatus comprising:

a table for supporting a substrate;

a pad holder for holding a polishing pad for polishing the substrate supported to the table;

a swing mechanism configured to swing the pad holder;

a supporting member for supporting the polishing pad swung to outside the table by the swing mechanism;

a measuring instrument configured to measure a diameter of the substrate; and

a driving mechanism for adjusting a position of the supporting member with respect to the substrate supported to the table according to the diameter of the substrate measured by the measuring instrument,

wherein the measuring instrument includes at least three centering mechanisms, the at least three centering mechanisms push the substrate supported to the table in a center direction of the table for positioning, and the measuring instrument is configured to calculate the diameter of the substrate based on a positioning result of the substrate with the centering mechanisms,

wherein the at least three centering mechanisms each include a rotation shaft and a centering member, the rotation shafts are disposed around the table, and the centering members are mounted to the rotation shafts, and

the centering member includes a first contact portions and a second contact portion, the first contact portions contact the substrate when the rotation shafts rotate in a first direction, and the second contact portions contact the substrate when the rotation shafts rotate in a second direction opposite to the first direction,

the measuring instrument is configured to calculate the diameter of the substrate based on rotation angles in the first direction of the rotation shafts or rotation angles in the second direction of the rotation shafts when the substrate is positioned.

5. The substrate processing apparatus according to claim 4, wherein

the supporting member includes a first supporting member and a second supporting member, the first supporting member is disposed on a swing path of the polishing pad outside the table, and the second supporting member is disposed on a swing path of the polishing pad on a side opposite to the first supporting member between which the table is interposed.

6. The substrate processing apparatus according to claim 5, wherein

the first supporting member and the second supporting member each have a support surface, and the support surfaces are configured to support an entire polishing surface of the polishing pad in contact with the substrate.

7. A substrate processing apparatus comprising:

a table for supporting a substrate;

a pad holder for holding a polishing pad for polishing the substrate supported to the table;

a swing mechanism configured to swing the pad holder;

a supporting member for supporting the polishing pad swung to outside the table by the swing mechanism;

a measuring instrument configured to measure a diameter of the substrate; and

a driving mechanism for adjusting a position of the supporting member with respect to the substrate supported to the table according to the diameter of the substrate measured by the measuring instrument,

wherein the measuring instrument includes an imaging member, the imaging member is configured to obtain an image of an outer peripheral portion of the substrate supported to the table, and the measuring instrument is configured to calculate the diameter of the substrate based on the image obtained by the imaging member,

the swing mechanism includes an arm, a swing shaft, and a rotation drive mechanism, the arm holds the pad holder, the swing shaft supports the arm, and the rotation drive mechanism rotatably drives the swing shaft,

the arm includes a first arm, a second arm, a third arm, and a fourth arm, the first arm holds the polishing pad, the second arm holds a cleaning tool, the third arm holds a polishing pad different from the polishing pad in diameter, and the fourth arm holds the imaging member, and

the first, the second, the third, and the fourth arms are each radially arranged around the swing shaft.

8. The substrate processing apparatus according to claim 7, wherein

the second arm further holds atomizers disposed on both sides of the cleaning tool together with the cleaning tool.

9. The substrate processing apparatus according to claim 7, wherein

the supporting member includes a first supporting member and a second supporting member, the first supporting member is disposed on a swing path of the polishing pad outside the table, and the second supporting member is disposed on a swing path of the polishing pad on a side opposite to the first supporting member between which the table is interposed.

10. The substrate processing apparatus according to claim 9, wherein

the first supporting member and the second supporting member each have a support surface, and the support surfaces are configured to support an entire polishing surface of the polishing pad in contact with the substrate.