

WHAT IS CLAIMED IS:

- 1 1. An electroplating apparatus seal cleaning assembly comprising:
2 an arm pivotable between a first position and a second position, wherein the arm
3 is rotatable about a central axis of the arm; and
4 a cleaning head including a bracket portion coupled with a distal portion of the
5 arm, the cleaning head characterized by a front portion formed to interface with a seal of the
6 electroplating apparatus, wherein the cleaning head defines a trench along the front portion, and
7 wherein the cleaning head defines a plurality of fluid channels through the cleaning head, each
8 fluid channel of the plurality of fluid channels fluidly accessing a backside of the trench.
- 1 2. The electroplating apparatus seal cleaning assembly of claim 1, wherein
2 the front portion of the cleaning head is at least partially characterized by an arcuate profile
3 configured to accommodate an annular seal.
- 1 3. The electroplating apparatus seal cleaning assembly of claim 1, wherein
2 the cleaning head further comprises a contact pin at least partially extending through the trench
3 and configured to be in direct contact with the seal.
- 1 4. The electroplating apparatus seal cleaning assembly of claim 3, wherein
2 the cleaning head further comprises a clearance pin at least partially extending through the trench
3 and configured to define a gap between the clearance pin and the seal when the contact pin is in
4 direct contact with the seal.
- 1 5. The electroplating apparatus seal cleaning assembly of claim 4, wherein
2 the plurality of fluid channels comprises:
3 a first channel fluidly accessing a first position along the trench; and
4 a second channel fluidly accessing a second position along the trench radially
5 offset from the first position in a direction of rotation of the seal, wherein the clearance pin is
6 positioned between the first position and the second position.
- 1 6. The electroplating apparatus seal cleaning assembly of claim 1, wherein
2 the cleaning head comprises a hydrophobic material.

1 7. An electroplating system comprising:
2 a system head having a rotor, the system head configured to hold a substrate for
3 processing;
4 a seal positioned on the rotor;
5 a head lifter coupled with the system head and configured to position the system
6 head; and
7 a seal cleaning assembly comprising:
8 an arm pivotable between a first position and a second position where a
9 distal portion of the arm is vertically aligned with an interior region of the system head,
10 wherein the arm is rotatable about a central axis of the arm, and
11 a cleaning head including a bracket portion coupled with a distal portion
12 of the arm, the cleaning head characterized by a front portion formed to interface with an
13 interior surface of the seal, wherein the cleaning head defines a trench along the front
14 portion, and wherein the cleaning head defines a plurality of fluid channels through the
15 cleaning head, each fluid channel of the plurality of fluid channels fluidly accessing a
16 backside of the trench.

1 8. The electroplating system of claim 7, wherein, when the arm is located in
2 the second position, the distal portion of the arm is configured to rotate the cleaning head from a
3 retracted position into direct contact with the seal, the electroplating system further comprising a
4 torque-controlled motor configured to drive the arm and maintain contact between the cleaning
5 head and the seal while the rotor rotates the seal across the cleaning head.

1 9. The electroplating system of claim 7, where the seal is characterized by an
2 annular form, and wherein the front portion of the cleaning head is at least partially characterized
3 by an arcuate profile configured to accommodate an inner annular sidewall of the seal.

1 10. The electroplating system of claim 7, wherein the cleaning head further
2 comprises a contact pin at least partially extending through the trench and configured to be in
3 direct contact with the seal during a cleaning operation.

1 11. The electroplating system of claim 10, wherein the cleaning head further
2 comprises a clearance pin at least partially extending through the trench and configured to define
3 a gap between the clearance pin and the seal when the contact pin is in direct contact with the
4 seal.

1 12. The electroplating system of claim 11, wherein the plurality of fluid
2 channels comprises:
3 a first channel fluidly accessing a first position along the trench; and
4 a second channel fluidly accessing a second position along the trench radially
5 offset from the first position in a direction of rotation of the seal.

1 13. The electroplating system of claim 12, wherein the clearance pin is
2 positioned between the first position and the second position, the electroplating system further
3 comprising:
4 a fluid delivery tube extending along the arm and configured to provide a fluid to
5 the first channel, and
6 a fluid removal tube extending along the arm and configured to remove the fluid
7 from the second channel, wherein a vacuum is maintained through the fluid removal tube during
8 operation.

1 14. A method of cleaning an electroplating system contact seal, the method
2 comprising:
3 delivering an acidic solution in a first fluid channel of a cleaning head, wherein
4 the cleaning head is positioned to physically contact the electroplating system contact seal;
5 rotating the electroplating system contact seal across the cleaning head; and
6 extracting the acidic solution from the cleaning head through a second fluid
7 channel radially offset from the first fluid channel in a direction of rotation of the electroplating
8 system contact seal.

1 15. The method of cleaning an electroplating system contact seal of claim 14,
2 wherein the acidic solution is substantially maintained within a volume defined in part by an
3 inner surface of the electroplating system contact seal, a trench formed within a front portion of

4 the cleaning head, and a contact pin at least partially extending through the trench proximate a
5 leading edge of the cleaning head in a direction of rotation of the electroplating system contact
6 seal.