Claims:

1. A liquid filtering apparatus comprising:

a bowl comprising an open end, a distal end opposite of the open end, and an interior that extends between the open end and the distal end;

a manifold that is capable of sealingly engaging the open end of the bowl, the manifold comprising a fluid inlet and a fluid outlet;

a cartridge assembly disposed at the interior, the cartridge assembly comprising a filter membrane, a cartridge assembly proximal end, and a cartridge assembly distal end, the cartridge assembly proximal end including a surface that is adapted to contact a surface of the manifold to form a cartridge assembly-manifold seal;

a core volume at a central inner side of the cartridge assembly;

a housing volume at an outer side of the cartridge assembly between the cartridge assembly and the bowl; and

a core vent extending through the manifold to a distal portion of the core volume to fluidly connect the distal portion of the core volume with an exterior of the liquid filtering apparatus, wherein the core vent comprises a conduit that has a first end and a second end, the first end located at a distal portion of the core volume and the second end located at the exterior.

2. The apparatus of claim 1, wherein:

the cartridge assembly has a central axis extending between the cartridge assembly proximal end and the cartridge assembly distal end, within the core volume,

the cartridge assembly-manifold seal can be formed by pressing the cartridge assembly proximal end surface into contact with the surface of the manifold, with movement of the cartridge assembly along the central axis toward the manifold, and

the cartridge assembly-manifold seal can be disassembled by pulling the cartridge assembly proximal end surface from the surface of the manifold, with movement of the cartridge assembly along the central axis away from the surface of the manifold.

3. The apparatus of claim 1 or 2, wherein the cartridge assembly includes a vent assembly that includes the core vent that extends from the proximal end of the cartridge assembly to the distal portion of the core volume.

4. The apparatus of any of claims 1 through 3, wherein the fluid inlet communicates with the housing volume, and the fluid outlet communicates with the core volume.

5. The apparatus of any of claims 1 through 4, wherein the vent comprises a conductive material that electrically connects the core volume to electrical ground.

6. The apparatus of any of claims 1 through 5 installed in combination with a semiconductor manufacturing tool, to supply filtered liquid flowing from the fluid outlet to the semiconductor manufacturing tool.

7. A method of filtering a liquid using a liquid filtering apparatus, the method comprising:

passing the fluid into the apparatus, wherein the apparatus comprises a housing that includes a manifold and a bowl, with the bowl situated vertically above the manifold, the housing comprising:

the bowl, which comprises an open end, a distal end opposite of the open end, and an interior that extends between the open end and the distal end,

the manifold, which is engaged with the open end of the bowl to form a manifold-bowl seal, the manifold comprising a fluid inlet and a fluid outlet,

a cartridge assembly disposed at the interior, the cartridge assembly comprising a filter membrane, a cartridge assembly proximal end, and a cartridge assembly distal end, the cartridge assembly proximal end including a surface that is adapted to contact a surface of the manifold to form a cartridge assembly-manifold seal,

a core volume at a central inner side of the cartridge assembly,

a housing volume at an outer side of the cartridge assembly between the cartridge assembly and the bowl, and

a core vent extending through the manifold to a distal portion of the core volume to fluidly connect the distal portion of the core volume with an exterior of the housing, wherein the core vent comprises a conduit that has a first end and a second end, the first end is located at a distal portion of the core volume and the second end is located at the exterior;

passing the liquid into the inlet, from the inlet through the housing volume, through the filter membrane, to the core volume, and then through the outlet, wherein gas accumulates at the distal portion of the core volume; and

releasing the gas through the core vent.

8. The method of claim 7, wherein:

the cartridge assembly has a central axis extending between the cartridge assembly proximal end and the cartridge assembly distal end, within the core volume,

the cartridge assembly-manifold seal can be formed by pressing the cartridge assembly proximal end surface into contact with the surface of the manifold, with movement of the cartridge assembly along the central axis toward the manifold, and

the cartridge assembly-manifold seal can be disassembled by pulling the cartridge assembly proximal end surface from the surface of the manifold, with movement of the cartridge assembly along the central axis away from the surface of the manifold.

9. The method of claim 7 or 8, wherein the cartridge assembly includes a vent assembly that includes the core vent that extends from the proximal end of the cartridge assembly to the distal portion of the core volume.

10. The method of any of claims 7 through 9, wherein the core vent comprises conductive material that electrically connects the core volume to electrical ground.