What is claimed is:

1. An apparatus comprising:

a receiver configured to receive a flow cell cartridge containing a microfluidic flow plate, the receiver including:

a chuck having an elongate rectangular area configured to receive the microfluidic plate thereon when the flow cell cartridge is received by the receiver, the elongate rectangular area having a first long side, a second long side opposite the first long side, a first short side, and a second short side opposite the first short side;

a first fluidic port block comprising a first fluidic port, the first fluidic port block configured to float at least one of longitudinally or laterally relative to the chuck and positioned along the first short side and outside of the elongate rectangular area, the first fluidic port block comprising one or more first alignment holes configured to receive one or more corresponding first fluidic port indexing features of the flow cell cartridge;

a first rotatable clamp arm configured to rotate about a first axis parallel to a plane of a surface of the chuck, wherein the first fluidic port is positioned adjacent the first axis and the elongate rectangular area of the chuck;

a first lateral indexing pin positioned adjacent to the first long side, having a corresponding center axis offset from the first long side in a direction perpendicular to the first long side and parallel to the plane of the surface of the chuck, and extending upwardly relative to the plane of the surface of the chuck;

a first longitudinal indexing pin positioned to contact a support bracket of the flow cell cartridge, the first longitudinal indexing pin configured to move longitudinally relative to the chuck to align the flow cell cartridge in a longitudinal direction; and

a second longitudinal indexing pin, the second longitudinal indexing pin fixed relative to the chuck.

2. The apparatus of claim 1, wherein the chuck is a vacuum chuck.

3. The apparatus of claim 1, wherein:

the first fluidic port block includes at least two first alignment holes,

one of the at least two first alignment holes has a circular cross section when viewed along an axis perpendicular to the plane of the surface of the chuck for receiving the microfluidic plate, and

another of the at least two first alignment holes has an obround cross section when

viewed along the axis perpendicular to the plane of the surface of the chuck for receiving the microfluidic plate.

4. The apparatus of claim 3, wherein the at least two first alignment holes have chamfered edges.

5. The apparatus of claim 1, further comprising a second fluidic port block comprising a second fluidic port, the second fluidic port block positioned on a longitudinally opposite side of the chuck relative to the first fluidic port block, the second fluidic port block moveable at least one of longitudinally or laterally relative to the chuck, the second fluidic port block comprising one or more second alignment holes configured to receive one or more corresponding second fluidic port indexing features of the flow cell cartridge.

6. The apparatus of claim 5, further comprising:
an additional first fluidic port block moveable at least one of longitudinally or laterally relative to the chuck, the additional first fluidic port block comprising one or more additional first alignment holes configured to receive one or more corresponding additional first fluidic port indexing features of the flow cell cartridge; and
an additional second fluidic port block moveable at least one of longitudinally or laterally relative to the chuck, the additional second fluidic port block comprising one or more additional second alignment holes configured to receive one or more corresponding additional second fluidic port indexing features of the flow cell cartridge, wherein:
the additional first fluidic port block is positioned adjacent to the first fluidic port block,
the additional second fluidic port block is positioned adjacent to the second fluidic port block,
the additional first fluidic port block is configured to move relative to the first fluidic port block, and
the additional second fluidic port block is configured to move relative to the second fluidic port block.

7. The apparatus of claim 1, wherein the first fluidic port block floats longitudinally and laterally relative to the chuck.

8. The apparatus of claim 1, wherein the first longitudinal indexing pin is spring-biased towards the chuck.

9. The apparatus of claim 1, wherein the first rotatable clamp arm is configured to laterally translate along the first axis with rotation of the first rotatable clamp arm about the first axis.

10. The apparatus of claim 9, further comprising a second lateral indexing pin offset laterally from the chuck and extending upwardly relative to the plane of the surface of the chuck, the first lateral indexing pin and the second lateral indexing pin defining a lateral plane, wherein the rotatable clamp arm is configured to laterally translate towards the lateral plane when the rotatable clamp arm is rotated in a first direction.

11. The apparatus of claim 1, further comprising a second rotatable clamp arm configured to rotate about a second axis parallel to the plane of the surface of the chuck for receiving the microfluidic plate, wherein the surface of the chuck for receiving the microfluidic plate is interposed between the first axis and the second axis.

12. The apparatus of claim 1, wherein the first rotatable clamp arm is configured to rotate to a position that overlaps the first fluidic port block when viewed along an axis perpendicular to the plane of the surface of the chuck for receiving the microfluidic plate.

13. The apparatus of claim 1, wherein the first fluidic port block is also configured to move vertically relative to the chuck.