CLAIMS

What is claimed is:

1. A skid for use in separating biocomponents, the skid comprising:

a housing bounding a compartment, the compartment being partially bounded by a mounting platform; and

a loading assembly secured to the housing so as to communicate with the compartment, the loading assembly comprising:

an alignment plate having a top surface with cavity recessed therein, the cavity communicating with the compartment;

a drive rotor rotatably disposed below the alignment plate and at least partially encircling the cavity, the drive rotor including one or more magnets;

a motor coupled to the drive rotor for selectively rotating the drive rotor about the cavity; and

a mount at least partially encircling the drive rotor and communicating with the compartment, the mount including a mounting plate having one or more mounting elements upstanding therefrom, the mount being movable between a raised position wherein the mounting plate is aligned with the alignment plate and a second lowered position wherein the mounting plate is disposed at an elevation lower than the alignment plate.

2. The skid as recited in claim 1, further comprising:

a doorway formed on the housing and communicating with the compartment; and

a door mounted on the housing, the door being movable between an open position wherein the doorway is openly exposed and a closed position wherein the door covers the doorway.

3. The skid as recited in claim 2, further comprising notch recessed into an exterior surface of the housing and extending between a side face of the housing and the doorway, the notch bounding a channel the communicates with the compartment whether the door is in the open position or the closed position.

4. The skid as recited in claim 1,

wherein the mounting platform comprises an opening extending therethrough; and

wherein the loading assembly is secured to the housing so that the alignment plate is aligned with the opening extending through the mounting platform.

5. The skid as recited in claim 4, wherein at least a portion of a top surface of the mounting platform, a top surface of the alignment plate, and a top surface of the mounting plate are horizontally aligned when the mount is in the raised position.

6. The skid as recited in claim 1, wherein the loading assembly further comprises:

an annular inner sleeve that encircles an opening, the inner sleeve having an upper end with the alignment plate mounted thereon;

a receiver extending from a bottom surface of the alignment plate and projecting into the opening of the annular sleeve, the receiver bounding the cavity; and

the drive rotor being at least partially disposed within the opening of the inner sleeve.

7. The skid as recited in claim 6, wherein the loading assembly further comprises an annular outer sleeve encircling the inner sleeve, the outer sleeve having an upper end with the mounting plate mounted thereon, the outer sleeve and the mounting plate being movable relative to the inner sleeve.

8. The skid as recited in claim 7, further comprising:

a support from which the inner sleeve upstands;

a pivot mount block secured to the support at a location spaced apart from the inner sleeve;

a pair of pivot arms each having a first end pivotably mounted to the pivot mount block so that the pair of pivot arms extend along opposing sides of the outer sleeve; and

a pair of support pins outwardly projecting from the opposing sides of the outer sleeve and coupling with corresponding ones of the pair of pivot arms.

9. The skid as recited in claim 7, further comprising a linear actuator positioned to selectively raise and lower the outer sleeve relative to the inner sleeve.

10. The skid as recited in claim 1, wherein the one or more mounting elements comprise one or more L-shaped clips upstanding from the mounting plate and facing toward the cavity.

11. The skid as recited in claim 1, further comprising one or more peristaltic pumps mounted on an exterior surface of the housing.

12. The skid as recited in claim 1, further comprising one or more pinch valves mounted on an exterior surface of the housing.

13. The skid as recited in claim 1, further comprising one or more of a pressure sensor, conductivity sensor, flow meter sensor, pH sensor, temperature sensor, or turbidity sensor mounted on an exterior surface of the housing.

14. A system for separating biocomponents, the system comprising:

the skid as recited in claim 1; and

a centrifugal separator removably disposed within the compartment of the skid, the centrifugal separator being supported on the mounting plate of the loading assembly.

15. The system as recited in claim 14, further comprising a first fluid line fluid coupled to the centrifugal separator within the compartment of the skid, the first fluid line passing out of the compartment and being removably secured to an exterior surface of the housing.

16. A method for separating biocomponents, the method comprising:

positioning a centrifugal separator on a top surface of the mounting platform of the skid as recited in claim 1;

laterally moving the centrifugal separator within the compartment of the housing so that the centrifugal separator is supported on the mounting plate of the mount and the mounting elements engage the centrifugal separator;

moving the mounting plate to the lowered position so that centrifugal separator is lowered relative to the alignment plate, a drive coupling of the centrifugal separator being received within the cavity of the alignment plate as the mounting plate is moved to the lowered position; and

activating the motor to rotate the drive rotor which magnetically rotates a separation rotor of the centrifugal separator.

17. The method as recited in claim 16, wherein laterally moving the centrifugal separator comprises laterally sliding the centrifugal separator on the mounting platform proximate a magnetic field produced by the one or more magnets of the drive rotor, wherein the magnetic field assists in positioning of the centrifugal separator.

18. The method as recited in claim 16, wherein moving the mounting plate to the lowered position rigidly locks the centrifugal separator to the housing of the skid.

19. The method as recited in claim 16, wherein the step of positioning a centrifugal separator on the top surface of the mounting platform comprises:

passing the centrifugal separator through a doorway formed on the housing and into the compartment; and

closing a door that covers the doorway after the centrifugal separator is within the compartment.

20. The method as recited in claim 16, wherein the centrifugal separator is positioned on the top surface of the mounting platform so that a first fluid line coupled with centrifugal separator passes out of the compartment of the housing, the method further comprising removably securing the first fluid line to a pinch valve and/or a peristaltic pump mounted on an exterior surface of the housing.