WHAT IS CLAIMED IS:

1. A bioreactor vessel, comprising:

a bottom plate;

a vessel body coupled to the bottom plate, the vessel body and the bottom plate defining an interior compartment therebetween; and

a plurality of recesses formed in the bottom plate, each recess of the plurality of recesses being configured to receive a corresponding alignment pin on a bed plate for aligning the bioreactor vessel on the bed plate.

2. The bioreactor vessel of claim 1, wherein:

the bottom plate is generally rectangular in shape; and

wherein the plurality of recesses is four recesses, each recess of the four recesses being located adjacent to a respective corner of the bottom plate.

3. The bioreactor vessel of claim 1, wherein:

the plurality of recesses are generally cylindrical in shape and have a generally dome-shaped interior surface;

wherein a diameter of the recesses is greater than a diameter of the alignment pins to allow for tilting of the bioreactor vessel when the alignment pins are received in the recesses.

4. The bioreactor vessel of claim 3, wherein:

the recesses and the alignment pins are dimensioned such that when each alignment pin contacts the domed shaped interior surface of a respective recess, the bioreactor vessel is in a level state.

5. The bioreactor vessel of claim 1, further comprising:

a position verification structure formed on a bottom surface of the bottom plate, the position verification structure being configured to interact with a sensor on the bed plate to allow for a determination of a position of the bioreactor vessel with respect to the bed plate.

6. The bioreactor vessel of claim 5, wherein:

the position verification structure is a beam break and the sensor is an optical beam above a surface of the bed plate;

wherein the beam break is configured to break or interrupt the optical beam when the bioreactor vessel is seated on the bed plate.

7. The bioreactor vessel of claim 1, further comprising:

at least one engagement surface formed on a bottom surface of the bottom plate adjacent to an edge of the bottom plate, the at least one engagement surface being configured to engage a cam arm of a tilting mechanism that is selectively extendable above the bed plate to enable tilting of the bioreactor vessel with respect to the bed plate.

8. The bioreactor vessel of claim 7, wherein:

the bioreactor vessel is configured to tilt about an axis defined by a joint formed by one of the plurality of recesses in the bottom plate and a corresponding alignment pin on the bed plate.

9. The bioreactor vessel of claim 1, wherein:

the at least one engagement surface is two engagement surfaces offset from a center line of the bottom plate.

10. The bioreactor vessel of claim 9, wherein:

the two engagement surfaces are located at opposing ends of the bottom plate.

11. The bioreactor vessel of claim 1, further comprising:

at least one aperture formed in the bottom plate configured to allow for sensing of contents of the bioreactor vessel.

12. The bioreactor vessel of claim 1, wherein:

the bottom plate includes a grid surface configured to provide support and gas exchange; and

wherein the bioreactor vessel further includes a gas-permeable, liquid impermeable membrane disposed above the bottom plate.

13. The bioreactor vessel of claim 12, further comprising:

a feed port configured to facilitate the addition of a fluid into the interior compartment; and

a drain port configured to facilitate removal of used at least one of a fluid and/or cells from the cavity.

14. The bioreactor vessel of claim 13, further comprising:

an air balance port formed in a top of the vessel body, the air balance port being configured to allow air to enter or exit the bioreactor vessel.

15. The bioreactor vessel of claim 13, wherein:

the feed port and the drain port are located at opposing ends of the bioreactor vessel.

16. A method for bioprocessing, comprising the steps of:

operatively connecting a bottom plate to a vessel body to define an interior compartment therebetween, the bottom plate and the vessel body forming a bioreactor vessel;

aligning a recess in the bottom plate with an alignment pin of a bioprocessing system; and

seating the bioreactor vessel on a bed plate of the bioprocessing system.

17. The method according to claim 16, wherein:

the bottom plate includes a position verification structure formed on a bottom surface of the bottom plate, and the step of seating the bioreactor vessel on the bed plate incudes detecting a presence of the position verification structure with a sensor on the bed plate.

18. The method according to claim 16, further comprising the step of:

seating the bioreactor vessel on the bed plate includes aligning at least one engagement surface on a bottom surface of the bottom plate with a cam arm of a tilting mechanism that is

positioned below an upper surface of the bed plate and is selectively extendable above the upper surface of the bed plate.

19. The method according to claim 16, further comprising the step of:
disposing a gas-permeable, liquid impermeable membrane within the interior compartment above the bottom plate.

20. The method according to claim 16, further comprising the step of:
with an air balance port in a surface of the vessel body, adjusting an air pressure within the bioreactor vessel in relation to ambient air outside the bioreactor vessel.

21. The method according to claim 16, further comprising the steps of:
connecting a feed line to a feed port formed in a surface of the vessel body; and
connecting a drain line to a drain port formed in a wall of the vessel body;
wherein the feed port and the drain port are arranged at opposing ends of the bioreactor vessel.

22. The method according to claim 19, wherein:
the feed port is located in a top surface of the vessel body; and
the drain port is located in a sidewall of the vessel body.