CLAIMS

1. A bioreactor system comprising a bioreactor vessel and a coupling module, wherein the bioreactor vessel comprises a first coupling member and the coupling module comprises a second coupling member adapted to couple with the first coupling member when the bioreactor vessel is rotated relative to the coupling module.

2. The bioreactor system of claim 1, wherein one of the first coupling member and the second coupling member comprises a protrusion, and wherein the other of the first coupling member and the second coupling member comprises a notch adapted to receive the protrusion.

3. The bioreactor system of claim 1 or claim 2, wherein the first coupling member comprises a first edge having a first series of alternating notches and protrusions formed about the first edge, and wherein the second coupling member comprises a second edge having a second series of alternating notches and protrusions formed about the second edge.

4. The bioreactor system of claim 3, wherein the first series of protrusions and the second series of protrusions can pass through the second series of notches and the first series of notches, respectively, for coupling the bioreactor vessel to the coupling module.

5. The bioreactor system of claim 3 or claim 4, wherein the first coupling member and the second coupling member are adapted to couple the bioreactor vessel to the coupling module when the first and second series of protrusions are aligned with each other by relative rotation of the bioreactor vessel and the coupling module.

6. The bioreactor system of any of claims 3 to 5, wherein the first coupling member comprises a coupling plate having an outer edge with the first series of alternating notches and protrusions, and wherein the second coupling member comprises a coupling ring having an inner edge with the second series of alternating notches and protrusions, wherein the coupling plate is configured to pass through the coupling ring when the first series of protrusions are aligned with the second series of notches.

7. The bioreactor system of any of claims 3 to 6, further comprising an abutment arranged such that when the first coupling member is coupled to the second coupling member one of the first and second series of protrusions is disposed between the abutment and the other of the first and second series of protrusions.

8. The bioreactor system of claim 7, wherein:

the coupling module comprises the abutment and wherein the abutment is spaced from the second series of protrusions on the second coupling member such that when the second coupling member is coupled to the first coupling member the first series of protrusions on the first coupling member are disposed between the abutment and the second series of protrusions; or

the bioreactor vessel comprises the abutment and wherein the abutment is spaced from the first series of protrusions on the first coupling member such that when the first coupling member is coupled to the second coupling member the second series of protrusions on the second coupling member are disposed between the abutment and the first series of protrusions.

9. The bioreactor system of claim 8, wherein the abutment is spaced from the first or second coupling member such that the second or first series of protrusions, respectively, can move freely between the abutment and the other of the first or second series of protrusions as the bioreactor vessel is rotated relative to the coupling module.

10. The bioreactor system of any preceding claim, wherein the bioreactor vessel comprises a base plate and a compressible container, wherein the base plate comprises the first coupling member, and wherein the coupling module is operably connected to an agitation module such that the agitation module is operable to move the coupling module and the base plate when coupled to the coupling module.

11. The bioreactor system of any preceding claim, wherein the bioreactor vessel comprises an expansion container, and wherein the expansion container comprises the first coupling, and wherein the bioreactor vessel further comprises an expansion frame surrounding the expansion container and configured to move with expansion and compression of the expansion container, and wherein the expansion frame comprises the first coupling member.

12. The bioreactor system of claim 11, further comprising an expansion module operable to move the expansion container, and wherein the expansion module comprises the coupling module adapted to couple with the expansion container.

13. The bioreactor system of any preceding claim, wherein the bioreactor system comprises a first coupling module adapted to couple with a base plate of the bioreactor vessel and a second coupling module adapted to couple with an expansion container of the bioreactor vessel.

14. The bioreactor system of any preceding claim, wherein the coupling module comprises a support adapted to hold the bioreactor vessel, wherein the support comprises an actuator operable to rotate the bioreactor vessel relative to the coupling module about an axis, wherein the bioreactor vessel comprises a plurality of ports, the ports providing access to the bioreactor vessel, wherein the bioreactor vessel comprises an interface plate arranged to be supported by the support, the interface plate comprising the plurality of ports, and wherein the bioreactor system further comprises a port engagement device arranged to connect to one of the ports of the interface plate to access the bioreactor vessel.

15. The bioreactor system of claim 14, wherein when the first coupling member is coupled to the second coupling member the port engagement device is aligned with one of the ports of the interface plate.

16. The bioreactor system of claim 15, wherein the first and second coupling members are couplable in a plurality of discrete rotational positions, and wherein in each discrete rotational position the port engagement device is aligned with one of the ports of the interface plate.

17. The bioreactor system of any preceding claim, further comprising an instrument for housing the bioreactor vessel during use, wherein the coupling module is fixedly connected to the instrument so as to couple the bioreactor vessel to the instrument.

18. A bioreactor vessel for a bioreactor system, the bioreactor vessel comprising a container and a coupling member, and wherein the coupling member comprises a series of alternating notches and protrusions formed about an edge of the coupling member and configured to couple to a further coupling member of a coupling module.

19. A coupling module for an instrument of a bioreactor system, the coupling module comprising a coupling member having a series of alternating notches and protrusions formed about an edge of the coupling member and configured to couple to a further coupling member of a bioreactor vessel.

20. A method of operating the bioreactor system of any of claims 1 to 17, the method comprising:

positioning the bioreactor vessel and coupling module in a first position relative to each other, and

rotating one of the first coupling member or the second coupling member to a second position to couple the bioreactor vessel to the coupling module via the first and second coupling members.