

CELLCULT

The flight-proven CELLCULT cassette contains a single 50-mL bioreactor with many options: rotation (or not) at a few RPM, perfusion, oxygenation and timed sampling.

This reactor system is suitable for cells of all types and aquatic organisms. It can also serve as a large-scale crystallization reactor or emulsion polymerization reactor. Any kind of aqueous suspension can be placed in the reactor vessel.

Clean medium is fed by peristaltic pump to the reactor vessel from a fresh-medium storage bag at a rate specified by the experimenter.



CELLCULT cassette is shown without top cover. A gasket around the outer edge provides one of the two levels of safety containment.



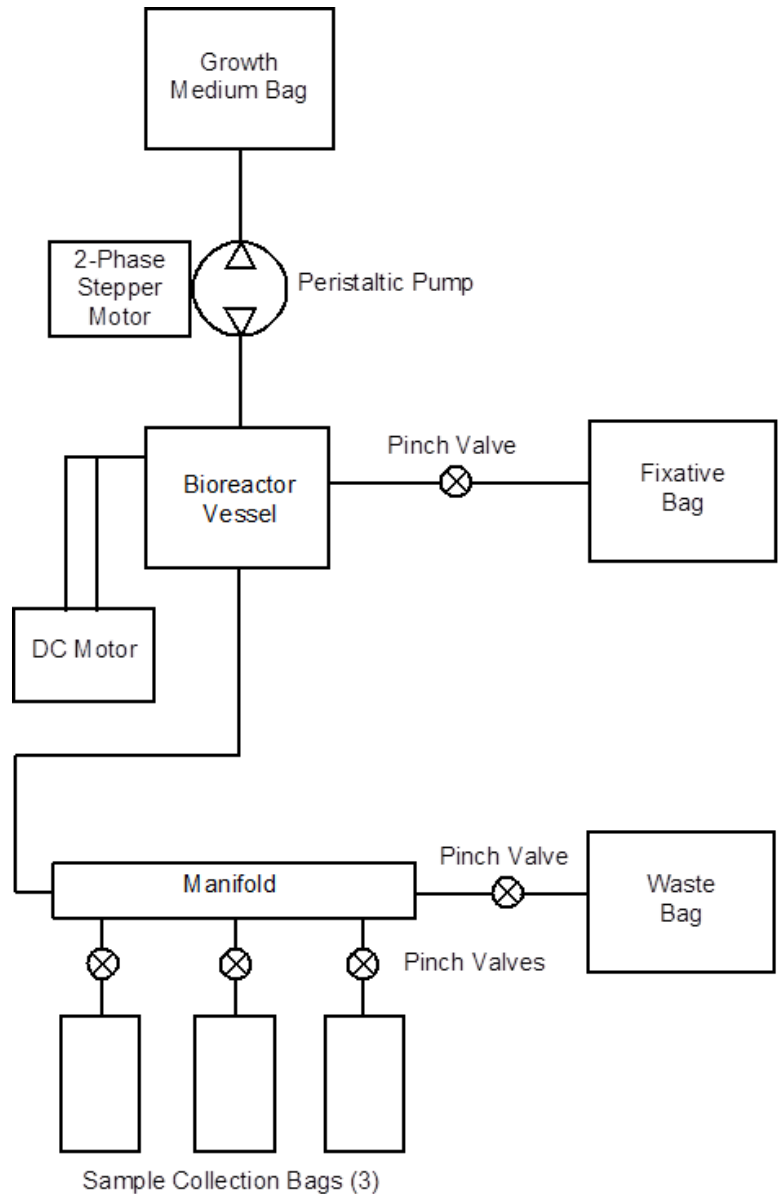
CELLCULT is operated on-orbit within the Techshot ADvanced Space Experiment Processor (ADSEP) Biotechnology Facility.

Up to three samples of the supernatant or unfiltered culture can be collected during the flight. The time at which such collections are made is completely open to the experimenter, as the process is totally automated.

Services

Techshot serves the customer for the complete mission cycle of each cassette that is to be launched on an orbital flight. This covers the following elements:

- Providing a hardware prototype to the investigator's laboratory approximately 11 months before launch.
- Providing flight or flight-equivalent hardware to the investigator's laboratory approximately 6 months before launch.
- Performing all paperwork and meeting milestones to qualify the experiment for flight technically: meeting safety/containment requirements and attending all reviews.
- Working with the investigator(s) at the launch site to build up the payload and arranging hand over (usually late-loading) to launch officials.
- Collecting and returning the payload during post-landing recovery operations.
- Modifying the existing hardware or building new hardware to fit the experimenter's needs.



Plumbing diagram of the CELLCULT system showing the reactor vessel, perfusion system, aeration loop and sampling manifold.

Techshot offers a comprehensive suite of professional tools for conducting research in space. CELLCULT can work in combination with many of them as a single, complete, and effective solution for transferring, processing and analyzing high-value samples on orbit.

CELLCULT+ADSEP+Sample Transfer Tool+Dynamic Microscope Stage+Mic-E