

Open Cycle Aether Reactor

Conceived by the Baal-Hamon design cluster of the [4th_elysian_celestial_empire](#) in [YE_34](#), the Open Cycle Aether Reactor design moves the Aether tap portion of the reactor outside of the ship. While extremely inefficient, the reactor configuration allows for much larger designs.



About

The Open Cycle Aether Reactor configuration is very similar to conventional aether reactors. The device opens a small passage to the [Aether](#), drawing out an immense amount of energy. The open cycle reactor designs store this energy in a compressed ball of matter inside of a large containment ring. The intense heat and electromagnetic energy put out by the storage mass in the center in turn powers the containment ring. Energy can then be directed out of the containment area to provide propulsion or to be used as a weapon system.

The Open-Cycle name comes from the reactor being directly exposed to space, compared to closed-cycle reactors that are entirely self-contained inside of containers / ships / structures.

The design itself comes from the [4th_elysian_celestial_empire](#)'s desire for [grand constructions projects](#). While fully enclosed reactors are much more efficient, and far more suitable for power armors, starships, ect, the Open-Cycle design allowed the empire to more quickly build the massive reactors needed to power their facilities and warships.

Design

Open-Cycle reactors are generally made from two components, and then have a number of accessories added to them based on how the reactor is being used. The Open-Cycle design is intended for use in space only, and the control ring's shield generators work to maintain a vacuum around the reactor core at all times.

Control Ring

The Control Ring contains the electronics, shield generators, and other equipment necessary to house the reactor and is generally spun around the core in order to help even out the intense electrical fields generated and counterbalance the spin of the core itself. The ring acts like an [Aether Shock Array](#), opening a path to the [Aether](#) and causing an amount of that universe's matter/anti-matter to spill out into the reactor's core. This provides the energy release necessary to run the reactor, which is in turn collected by the ring itself to power its systems and to keep the reactor core confined to a small point inside of the ring.

This control ring is usually connected to a starship or starbase through powerful electrostatic and gravitic fields.

Reactor Core

Contained inside of the control ring is the reactor core, a dense ball of mass compressed together tightly by the electrical and gravitational fields created by the control ring. This ball of mass spins rapidly in the direction opposite of the control ring, and is usually superheated and putting out a powerful magnetic field. As the Control Ring siphons off power from the reactor core its magnetic field weakens, it gets cooler, and the spinning slows. The core can then be juiced up again by the control ring opening up a path to the [Aether](#) inside of the core itself, the resulting energy release being absorbed into the material of the core itself.

Other Stuff

The reactor design is configured so that other parts can be positioned around the control ring. The core ring's shields can be configured to release some of the material of the reactor core in a specified direction to be used by other systems floating in space near by. The design uses powerful shields to keep attached components at the proper distance from the reactor.

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