Âmanus Tyokanorjopa (Anti-Hydrogen Reactor)



The *Poku Saeruo Degonjo* have been using Anti-Hydrogen Reactors since prior to their arrival in the Kikyo sector in YE -719.

About Anti-Hydrogen Reactors

The Poku'vonai have used Anti-Hydrogen reactors for their secondary power sources for generations. These are used to supply power to tactical systems. The Clan uses liquid hydrogen and Antihydrogen to facilitate storage. They produce twice as much power as a Sumanâ-a Tyokanorjopa (Fusion Reactors) of the same size.

Inside the Reactor

The reactor does not run continuously, but operates in a pulse fashion. Fuel is released into the reaction chamber. When the fuel is mixed it reacts causing the core temp to rise. The heat exchangers and reactor cooling system engage, once the core temperature drops below a specified level, another fuel release is triggered and the cycle repeats.

The reactor consists of the following:

- Pre-Stage
- Reaction Chamber
- Heat Exchangers
- Cooling System

Fuel Pre-Stage

There is a fuel pre-stage area where the fuel is held prior to being released into the reactor. In this area the fuel is heated to change the fuel from a liquid to gaseous state. The anti-hydrogen staging area keeps the fuel contained in a force field. The pre-stage area serves as a safety mechanism that ensures the main storage fuel containment is not directly connected to the reactor. The size of the reactor determines the number of fuel module connection points. Though normally four is the maximum.

Reaction Chamber

The reaction chamber is where the two types of fuel are brought together in a controlled fashion. Fuel is released from the Pre-Stage chamber into the core for reaction. The containment force-fields allow the fuel to pass into the chamber.

Core

The interior or core of the reactor is shielded by force-fields to keep the fuel and the energy from damaging the physical structure.

Heat Exchanger

Inside the reactor are several heat exchanger units. These are constructed out of tough durable material. A series of tubing carrying heat transfer fluid pass through the reactor to be super-heated. There are two sets of heat exchangers in the reaction chamber. The super-heated fluid is then transferred into the Gean Norjopa (Generator).

Cooling System

The cooling system is designed to keep the reactor housing from super-heating and being reduced to a molten slag. The body of the reactor is filled with tubing and heat collecting panels. Cooled liquid is pumped throw the tubing and cools the reactor by heat transfer. The heated fluid is then cooled and then recirculated. The waste heat is then released by radiator fins into space.

Fuel

Each reactor requires its own separate fuel storage capabilities. Each fuel type is stored in equal quantities. Each fuel repository is connected to the reactor by separate fuel lines.

Hydrogen Containment Module

The HCM modules are for the storage of the hydrogen fuel. The fuel module contains enough fuel for three hours of operation. The casing is thermally insulated, and has a cooling system to keep the fuel in a liquid state.

Anti-Hydrogen Containment Module

The AHCM modules are for the storage of Antihydrogen, they produce a containment field to keep the Antihydrogen from contacting anything. For safety purposes there are two independent field systems. The fuel module typically contains enough fuel for three hours of continuous operation.

In the event of a cascading failure of the containment field, the modules can be jettisoned.

Fuel Module Capacitor Unit

When installing or removing a HCM or AHCM a capacitor unit is attached to maintain the temperature, and force field containment. This allows the fuel module to be transferred to and from the primary storage area. A capacitor unit can maintain an fuel module for thirty minutes.

OOC Notes

Authored by Nashoba and approved by Wes on Nov 2, 2009 [1)]

[1)]
https://stararmy.com/roleplay-forum/index.php?threads/hidden-sun-clan-reactors.4613/

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