

The Grinder

"As Spacers, it is your final duty to go into the Grinder and become one with all the people. Do not hesitate, for your legacy will live on in your memory files as your implants are transfered to your successor clones. Though your bodymeats will be ground into a fine paste and sucked of its lifejuice, the Great Maker will sort you out in the Otherworld." – Fleetmaster Malaetu Eight Five, 85-0566-7494 The Art of Never Again, Chapter 548: Into the Grinder!

Of all the technologies at the disposal of the [Freespacers](#), the single most important is recycling. Since they have no habitable planets, every drop of water must be mined from ice, every fruit or vegetable must be grown aboard their ships. Their entire history this has greatly limited their maximum population and traveling distance. Every glass of water wasted, every bowl of food left uneaten means one less citizen that can be supported, and therefore one less citizen born. This has driven the Freespacers to make great strides in conservation and recycling technologies, the most important of which is the universal reprocessor, or more commonly, the Grinder.

The Grinder is actually a combination of two separate systems; A biomass recycler and fusion-electric smelter. Many citizens contain mechanical components and implants, while many Automata and starships commonly use organic elements and human neurons in their computer systems. This widespread use of biomechanical technologies creates the need for a dual recycling system.

The first stage involves the extraction of high value components from organic and mechanical components alike. Stem cells, implants, and intact components are extracted from the waste material. The remaining biomass and metals are then separated from one another, then both are crushed and ground one after the other into small pieces more easy for the subsystems to handle.

The biomass subsection utilizes a powerful digestive juice in order to break down organic matter into its basic nutrients and sugars, which are then filtered out of the solution and drained for storage. The biogas created from this process is condensed and also stored for later use, or for consumption by plants.

However, during times of water shortages this subsystem operates in a second mode. A Deoradh body that enters the Grinder is crushed and ground until it is no more than a thick paste, which is then filtered (without digestive enzymes) for water content. This second method is more common on long range scouting vessels and other ships isolated from the Mothership for extended periods of time, when both reducing consumption (eliminating crew) and increasing water supply is seen as a necessary evil.

The second subsection is used for reprocessing metals or raw ores. The previously crushed metal is mixed into a recyclable carrier fluid for easy transport. After extracting the metals from the carrier fluid, it uses a fusion-electric smelter and hot cracking column to separate and concentrate the various metals. This same system is also commonly used to smelt raw ores that are mined from asteroids.

Once the molten metals are separated they are then molded into small pellets, cooled, and reintroduced into the carrier fluid. The resulting slurry allows for rapid movement of materials throughout a ship, whether they are being sent to storage or engineering so they can be used to create replacement parts.

OOC Notes

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