

Senti Beam Cutter

The Senti beam cutter is a technology developed by the [Senti](#). It is a classic mining tool used by personnel across the [Kagami Galaxy](#) and beyond, based on a [Skydas War](#) era weapons technology according to the mythology surrounding the device.

It comes in a myriad of sizes, from ship mounted cutting torches capable of severing pieces off of small planetoids or large megastructures, to hand held torches capable of cutting through up to 2cm (0.78 in) of [Zesuaium](#) plate.

History

While the actual history of the device isn't exactly clear, there is a significant amount of mythology that indicates this tool has seen near continuous service since well before the Senti went into their nomadic form. The [Star Army Research Administration](#) has so far supported the mythological origins of the device as the closest to factual origins possible with current understanding.

What is known is that the beam cutter has been a staple of Senti vessels so long that there is no one alive who understands the design philosophy that lead to them.

Description

The Senti beam cutter is a remarkably simple device, using clever application of magnetic lensing, [lantz effect](#) acceleration, and room temperature superconductors.

At the core of the device are two [particle accelerators](#), in the center of which is a uranium fuel rod, though the device can use any radioactive or fissile material as fuel, with only minor adjustments. The radioactive decay emissions of the fuel are fed into the first accelerator, which is then spun up to about 70-80% of light speed. The fuel rod is then fed in at nanometer increments to ablate the electron shell off of the individual atoms, which are then fed into the second accelerator ring. The ablation event is used to power both accelerators, making a beam cutter self sustaining as long as it has fuel.

The second accelerator ring takes these atomic cores, accelerating these up to 99.9975% the speed of light over the course of a few minutes. Due the relationship between luminal speed and mass, this causes the mass of the atomic core to increase as energy is applied, rather than continue to accelerate. At the pull of the trigger, the control computer opens a magnetic lensing array, condensing and polarizing this near luminal plasma into a hair thin beam.

For a “pistol” hand held torch, this beam is usually approximately 1.25 nanometers wide, with a beam density of 1.25×10^{13} particles per sq. cm of impact and a diffusion range of approximately fifty meters.

In the case of the largest observed, the “reactor venting” incident by the [Shurista](#) at [Operation Fireplace](#), this beam was nearly a full kilometer wide.¹⁾

The two most common variants are the “Rifle” and the “Battery” variants common on the mining cruiser class ships used by Shurista, Sutsura, and Turassiel. Rifle beam diameters are typically 1.75 nanometers wide, and a 2 inch by six inch Uranium 238 fuel rod will last approximately ten minutes. Battery class usually average a 12 cm beam and can burn through approximately 1 kg/second of uranium fuel.

Usage

The beam cutter is a standard tool used by Senti scrappers and miners to break down and process large debris up to and including small planetoids, for the constant resources and supplies necessary for growth of the Flotilla. Most ships will have several of the devices, acting as small reactors across the vessel and as salvage tools. At extremely low power settings, the beam cutter can be used as a nuclear welding torch.

It should be noted, however, that the beam cutter has trouble with certain materials, such as Norian [Leviathan Husk](#) where it could take several seconds and a high power setting to cut through even a relatively thin piece. Another known trouble material for the beam cutter is [Zesuaium](#), which takes some time to erode through mostly by material fatigue and impact generated antimatter reactions. This is also known to cause a dangerous spike in local radiation outside the tolerances of Senti and some Freespace personnel.

OOO Notes

[Madi Harper](#) created this article on 2023/08/31 19:40.

[Weapon Template](#) Is a good place to start to look for Article sections that reviewers may expect to see.

I've usually seen separate and distinct articles for the ship-sized weapons, and then the ones sized down for handling by people. Weapons often have damage ratings and stats for whether they're anti-ship or anti-mech and so on. If you did want this to be one article that includes Pistol and Rifle and Ship-sized, then each one ought to have its own subsection in the article with that info written out.

Here's a couple weapon articles that I think are pretty dang good. ["Taihō" Scalable Mass Driver](#) [Mekir've Variable Plasma Sidearm](#)

Here's one that's nice and simple, by comparison [GP-16 Plasma Pistol](#)

One of the elements I see reviewers ask for very frequently is for more History, with timeline links. They want to know when design began, and who designed it, and when it hit the shelves, and when it was upgraded, how did it affect the society that built it, things like that.

☐ This article is a work-in-progress. Is it not currently approved.

¹⁾
<https://stararmy.com/roleplay-forum/threads/operation-fireplace-ostarae-os-malos.69452/page-5#post-431581>

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