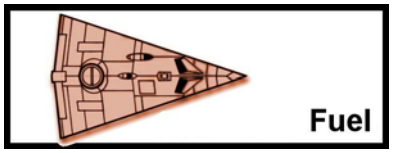
Fuel for Starships

Power Plants process fuel (or use other processes) to provide the energy required by ships.



POWER PLANTS

Starships use Power Plants to process fuel to create energy to power their operations.

Component Power Sources. Most components on a starship are self-powered: each sensor, most weapons and defenses, and many components are self-powered with FusionPlus modules. Localized power makes the component power independent in the event of a central power failure, major damage, or malfunction.

Central Power Source. A ship also requires a central Power Source to support its Interplanetary and Interstellar drives.

The three basic Power Sources for starships are the Power Plant, the Anti-Matter Plant, and the Collector. Each has its own governing details.

POWER PLANTS

The Power Plant is a Fusion Power Supply adapted to use in starships. Power Plants are the most commonly available ship power sources.

The system uses Hydrogen as its fuel. Hydrogen is available at many starports.

Routine Fuel Use

A Power Plant requires Fuel = PPlant Drive Potential x Hull Number in tons, per week. Fuel is stored in fuel tanks throughout the ship.

ANTI-MATTER PLANTS

The Anti-Matter is an advanced Power Source; it produces energy from matter-anti-matter reactions.

The system uses anti-matter as its fuel. Anti-Matter slugs are available at TL 16 or greater Class A starports.

Routine Fuel Use

An Anti-Matter Plant is fuelled with a 1 ton console within the Plant; it contains containing slugs of anti-matter. Each slug (which is quite small) is magnetically isolated until used.

COLLECTORS

The Collector is an alternative Power Source. It extends a Canopy which gathers energy (a combination of photons and exotic particles) radiated from stars and gas giants.

Routine Energy Use

A Collector is unsuitable as a routine energy supply. The major components of the ship rely on their individual power supplies.

OVERCLOCK

Power Plants and Anti-Matter Plants can easily provide power for ordinary operations. When used to power Jump, the Plant shifts to Overclock Mode.

A fresh, newly overhauled P-Plant or AM-Plant has an Overclock OC rating = 42 plus Quality and each use in Overclock Mode reduces its rating by 1; a Plant is typically overhauled annually to refresh its Overclock rating.

	P-Plant or A-Plant
Failure Rate QFR=	37 + Quality
Per Use Reduction	-1
Jump Failure	Check FR (4D)
Malfunction	Check FR (4D) if Jump Failed

A standard Quality Power Plant newly overhauled has a Failure Rating= 37 + 5 = 42. There is no chance of drive failure (due to Overclock) on its first use. After 19 jumps, Failure Rate = 23, and there is a remote chance of failure (of rolling 24 on 4D). After 26 jumps, Failure rate = 16, and the chance of failure (of rolling 17 or greater on 4D) is about 24%. Most ships stop for an overhaul before this point.

Jump Failure. If the jump fails, the fuel involved is wasted; the ship may need to refuel before attempting another jump.

FUEL

Power Plant Fuel	= P x T	Per week	Cr500 for refined fuel at a Starport; no cost skimmed or gathered.
Jump Drive Fuel	= J x T / 10	Per Jump	
Hop Drive Fuel	= H x T / 100	Per Hop	
Skip Drive Fuel	= S x T / 100	Per Skip	
NAFAL Fuel	= G x T /100	Per Month	
Maneuver Drive Fuel			
Anti-Matter Plant	= 1 ton (console)	Per Year	MCr2 per console.
Collector	special	special	MCr3 per canopy

CANOPY DEGRADATION

The Canopy of the Collector degrades with use. A newly installed Canopy has a Canopy Failure Rate= 500 plus Quality.

	Collector
Failure Rate FR=	500 + Quality.
Per Use Reduction	- 1D
Jump Failure	Check FR (4D)
Malfunction	Check FR if Jump Failed

A standard-Quality Canopy newly installed has a Failure Rate = 505. Failure is not a problem for many months.

Time To Recharge

The time to charge a Canopy (in years) = (10/ Failure Rate) + Flux.

FR=	Time To Recharge
500	0.02 years = 7 days + Flux
200	0.05 years = 18 days + Flux
50	0.20 years = 72 days + Flux
23	0.43 years = 158 days + Flux