

Vortex Plasma Thruster

The Vortex Plasma Thruster is a plasma thruster designed by [Osman Heavy Industries](#) in [YE 40](#) in an attempt to create a conventional thrust system with the punch to keep up with CFS fields in terms of speed. The ultimate result was a rugged thruster which is competitive with more exotic designs while maintaining a stealthy signature on nearly every type of sensor.

About the Vortex Plasma Thruster

The Vortex Plasma Thruster was designed by [Osman Heavy Industries](#) because they saw a need for faster “conventional” propulsive systems. In their view, that meant plasma rocket and jet systems. This style of propulsion was often unpopular because of low performance in comparison to more exotic means of propulsion such as high power [Ion Engines](#), hyperspace tap drives, turbo plasma/turbo Aether plasma engines, and CFS systems.

To solve this issue, OHI took inspiration from the propulsion system of the [U-1 Production Model Variable Mecha](#). Utilizing gravity systems similarly built into the thruster, the Vortex plasma thruster is less power hungry, because the gravity systems are not the primary means of propulsion. Instead, the built-in gravity generators generate a gravity field to reduce the perceived inertia of the craft mounting the engine and focus the thruster exhaust.

This gravity vortex focuses and enhances the already formidable thrust of the fusion thruster and brings the performance up to the level of the aforementioned “exotic” propulsion systems, though the thrusters can be run without them if lower thrust is desired.

Technical description

The plasma thruster component of the Vortex works by either cooling down hot plasma to the background temperature of space, or by using pre-cooled plasma from storage. Using plasma from storage is slightly less efficient unless it is re-heated before use. The heat of the plasma used is important, because when it is cooled as it exits the thruster, it creates a pressure differential between the plasma exiting the thruster and the plasma still inside it. This helps improve the performance of the engine. The cooling of the plasma also helps to keep the engine stealthy compared to more exotic options, making it similar in thermal and energetic profile to a cold gas thruster.

The gravity field generators, as one would expect, create gravity fields. These fields can often be assisted by using overlapping fields from gravity distorting shields. The gravity fields lightly distort space as well as reduce the inertia experienced by the craft they are mounted to, similar to the STL method of propulsion offered by [CDD drives](#) or [Gravimetric drives](#), allowing for higher speeds and accelerations to be attained by the plasma thrusters.

The fields are also what gives the Vortex its name. In addition to the other functions mentioned earlier, they form a vortex which focuses and then pushes the plasma back into the thruster's bell, which is

extremely strong, to obtain more velocity. The exhaust plasma is cycled through the vortex anywhere from a few times to several dozens, depending on the field efficiency. Eventually, the now extremely low-velocity exhaust is spun out through the vortex, leaving the exhaust with almost no kinetic energy at all.

The Vortex can also be used to operate the thruster in air-breathing mode, which uses intake air augmented by some plasma, vaguely similar to traditional jet engines.

Exhaust appearance

The exhaust of the Vortex, because of the presence of gravity distorting fields, formed into what looks like a whirlpool or vortex which has a 'tail' that trails briefly behind the thruster. As the plasma heats, it progresses in color from the fiery orange through the visible light spectrum until it reaches an incandescent [blue](#).

Nomenclature Information

The following section contains general information about the Vortex Plasma Thruster.

- Organization: [Osman Heavy Industries](#)
- Type: Propulsion system
- Class: OH-P4000
- Designer: [Osman Heavy Industries](#)
- Manufacturer: [Osman Heavy Industries](#)
- Production: Mass
- Price: varies by class

Classes

The Vortex Plasma Thruster comes in several different classes sized for use on different types of craft, however, it is not unusual to see over or undersized Vortex systems used on different products or craft. An important note is the fact that the speed attainable by any given craft often differs between different craft, based the number of thrusters used, the weight of the craft they are employed on, and the class of the thruster systems.

Class 1

Class 1 Vortex Plasma Thrusters are designed for the smallest sized applications, such as flying cars, hoverbikes, or large power armors.

Price: 1000 [KS](#)

Class 2

Class 2 Vortex Plasma Thrusters designed for smaller vehicles, such as very small passenger shuttles, light mecha, light fighters, or other craft of that size.

Price: 1500 ks

Class 3

Class 3 Vortex Plasma Thrusters are the most versatile and widely used class. They are designed for larger vehicles such as medium-sized shuttles, Medium-sized mecha, medium-sized fighters or other craft of that size.

Price: 3000 ks

Class 4

Class 4 Vortex Plasma Thrusters are designed for large vehicles, such as heavy mecha, cargo tugs, and very small starships or other craft of that size.

Price: 4500 ks

Class 5

Class 5 Vortex Plasma Thrusters are designed for light to medium-sized starships sized craft.

Price: 6000 ks

Class 6

Class 6 Vortex Plasma Thrusters are designed for Heavy starship to Light Capital ship sized craft.

Price: 9000 ks

Class 7

Class 7 Vortex Plasma Thrusters are designed for Medium to Heavy capital ship sized craft.

Price: 15000 ks

OOC Notes

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