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ARi Industries Inc

A D I V I S I O N O F



OKAZAKI
MANUFACTURING COMPANY

Heaters for Ion Thrusters

Aerospace Heaters, the spark plug of Ion Thrusters.

For efficiency within satellites and deep space probes, Ion Thrusters have become the ultimate technology.

Advances in thruster technology have provided the tools to give us unparalleled levels of thrust which can now last for months compared with the older generation of thrusters which could only last seconds.

Ion Thrusters - the dream of yesterday, the reality today

At the heart of each Ion thruster is the chamber that holds the cathodes. The Cathodes are part of the plasma generating system which give the thrusters their long life. Typical plasma thrusters have a heater to generate the heat needed to allow the plasma to start flowing in the Ion thrusters. At ARi Industries we have developed heaters to be used in these extreme environments.

Ion Thruster systems rely heavily on the lifetime and durability of our heaters along with their ability to reach temperatures that base metal heaters are unable to attain. Development of our heating solutions required researching the latest materials and technologies. ARi has

been successful in producing heaters able to reach the high temperatures required by our customers, yet still provide the long-life reliability needed.

ARi, located near Chicago Illinois in the USA, offers specialty heater cable which can be used to reach the extreme temperatures required to ignite the plasma within Ion Thrusters. Our product offering goes beyond what any normal base metal heaters can obtain. There are many different solutions for Ion Thrusters, but with our custom solutions designed around your requirements, ARi Industries are the only heater supplier you will need.

Out of this World

Temperatures

From our facility in Addison, Illinois, our engineers have developed a product which can reach out of this world temperatures, primarily with the use of refractory metals than allow us to reach the required temperatures needed in Ion Thrusters.

Our product is capable of reaching temperatures over 1400°C when used within a properly designed Thruster/Cathode assembly. How much higher the temperature will reach is up to the application parameters in which the heater will be used.

What temperature is needed to kick in the plasma? The temperature will depend on the design and efficiency of the Ion Thruster. Using the heaters correctly can be hard and does not always work with the normal way we use heaters here in our atmosphere.

Ari offers advanced testing

- Both film and digital x-ray is available.
- Secure FTP server where customers can access large files such as digital x-rays and large test data files.
- Dye penetrant of welds and exposed metal surfaces to insure higher level of quality.
- Helium leak testing to check the integrity of the metals and weld surfaces.
- Positive Material Identification (PMI) to confirm material composition.
- Thermal imaging and cycle testing services can be provided to your needs.
- ARI is annually recertified for ISO9001 .To view our current ISO certificate see our website.

Fig 1. One Example of Ion Thruster

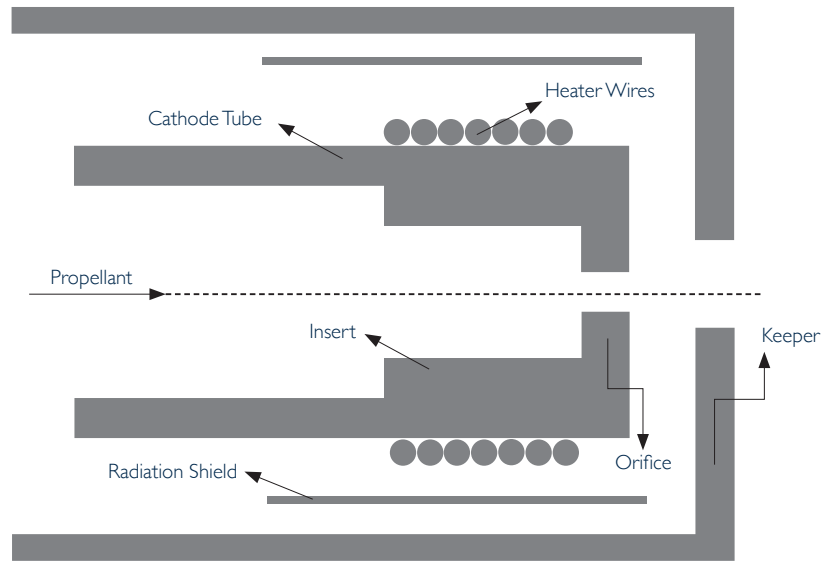


Fig 2. Second Example of Ion Thruster

