LIA AEROSPACE

HIGH-PERFORMANCE, LOW-COST, NON-TOXIC, NON-CRYOGENIC, BI-PROPELLANT, CHEMICAL PROPULSION SYSTEM FOR SATELLITES & SPACECRAFT REQUIRING HIGH-ENERGY MANEUVERS.

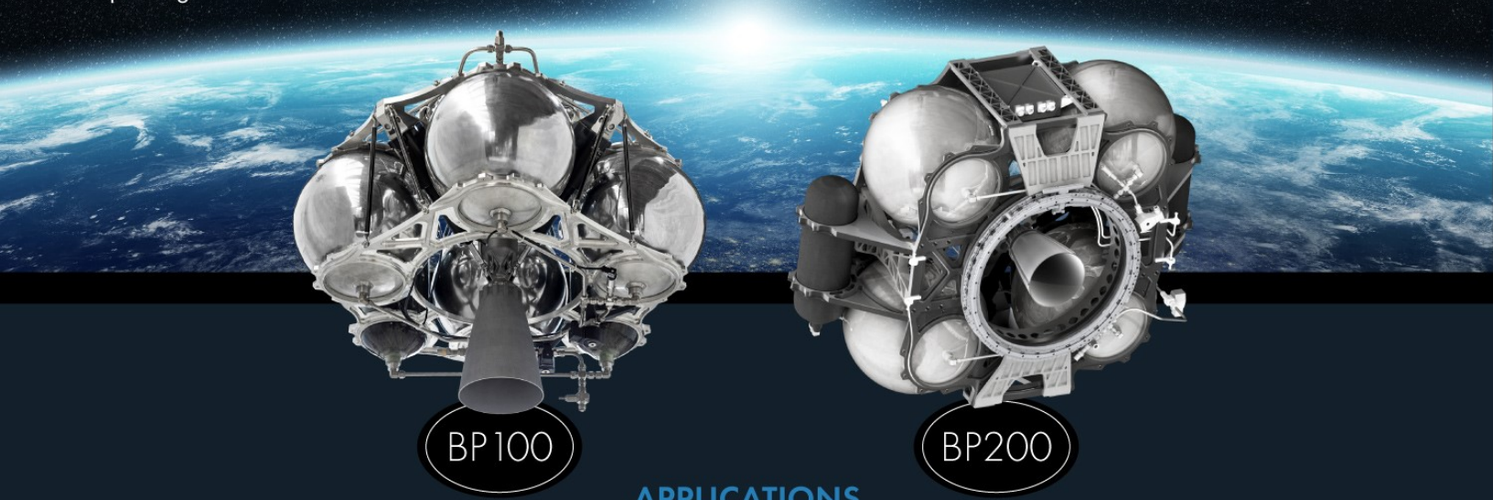
OUR PROPULSION SYSTEMS

The versatility of our propulsion systems enables a wide range of applications. Their throttleable and restartable capabilities, along with a selection of system sizes ranging from 100kg to 2000kg of propellant, allows for their adaptability.

Their main use is for satellites and spacecraft that require high delta-v maneuvers such as LEO-GEO, GTO-GEO, or Lunar insertion. These maneuvers can be done quickly (e.g., LEO-GEO in 2 weeks, or less, depending on the orbital precision required) and allow for time-critical missions that require high responsiveness to be carried out timely and accurately They also enable accelerated payload deployment by enabling the launcher to deploy payloads in lower orbits, subsequently allowing the satellite to elevate itself), thus increasing the launcher's payload capacity.

They can serve as a kick stage for launch vehicles. This increases the vehicle's payload capacity, and expands its orbit options in terms of both height and inclination, enabling multiple payload deployments into various orbits.

In the longer term, our systems can be also used as propulsion mechanisms for lunar and Mars landers.



BP100

BP200

APPLICATIONS

SATELLITES

Our products enable reliable and responsive maneuvering for high Delta-V missions.

LAUNCH VEHICLE KICK STAGE

Enhances the versatility of satellite deployment to various orbits and boosts the small launch vehicle's capacity by up to 70%*.

LUNAR AND MARS LANDERS

Our propulsion systems allow slow descent, control, and translational maneuvers for landers.

HOW THEY WORK

LIA's propulsion system can be installed onto the spacecraft before launch, without major modifications needed. Once the satellite or spacecraft is deployed by the launch vehicle, our propulsion systems can be activated to change their orbit (height and/or inclination) or for collision avoidance. The system will turn on for a specific duration and with a specific thrust, precisely maneuvering the spacecraft into its intended orbit.

PROPELLANTS

Our systems use non-toxic, non-cryogenic, bi-propellants. These propellants grant much lower risks and costs regarding their handling compared to other oxidizers such as liquid oxygen and other fuels such as hydrazine. Additionally, they boast a storage capability of up to 5 years while in orbit.

SPECS

ISP: 320 s
Thrust: 715 N (KX8 vacuum thruster), 5.8 kN (KX11 vacuum thruster)
Max. electrical power consumption: 300W

Our systems use thrust vector control (TVC) with a gimbaling action of ±10° for greater maneuvering. They also include a cold gas reaction control system (RCS) for roll control & sloshing pre-burn and reignition.

BOTTOM LINE

Although it's less efficient than electric propulsion (as all chemical propulsion is), it offers much higher thrust and can therefore move the spacecraft significantly faster. Electric propulsion can take up to 9 months to maneuver from LEO to GEO, whilst LIA's systems can do it in just 2 weeks. When time is critical, electric propulsion isn't suitable. Other chemical propulsion systems are significantly more expensive whilst LIA's systems will be commercialized at 20% the current market price. Therefore, LIA's systems offer fast in-space transportation at a low cost, enabling missions that would otherwise be unfeasible or exorbitantly expensive.