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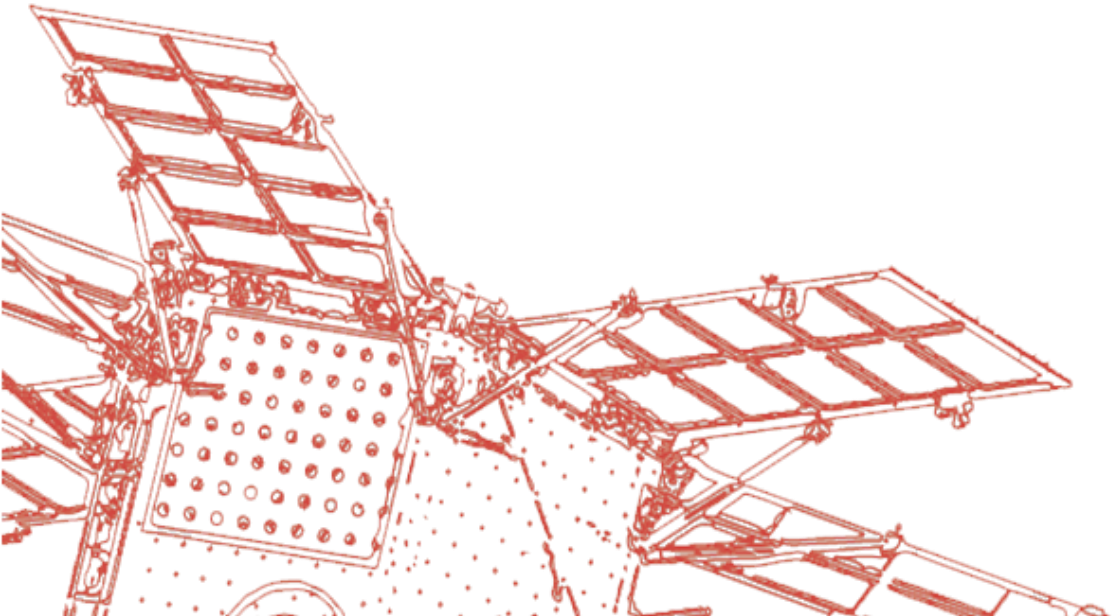
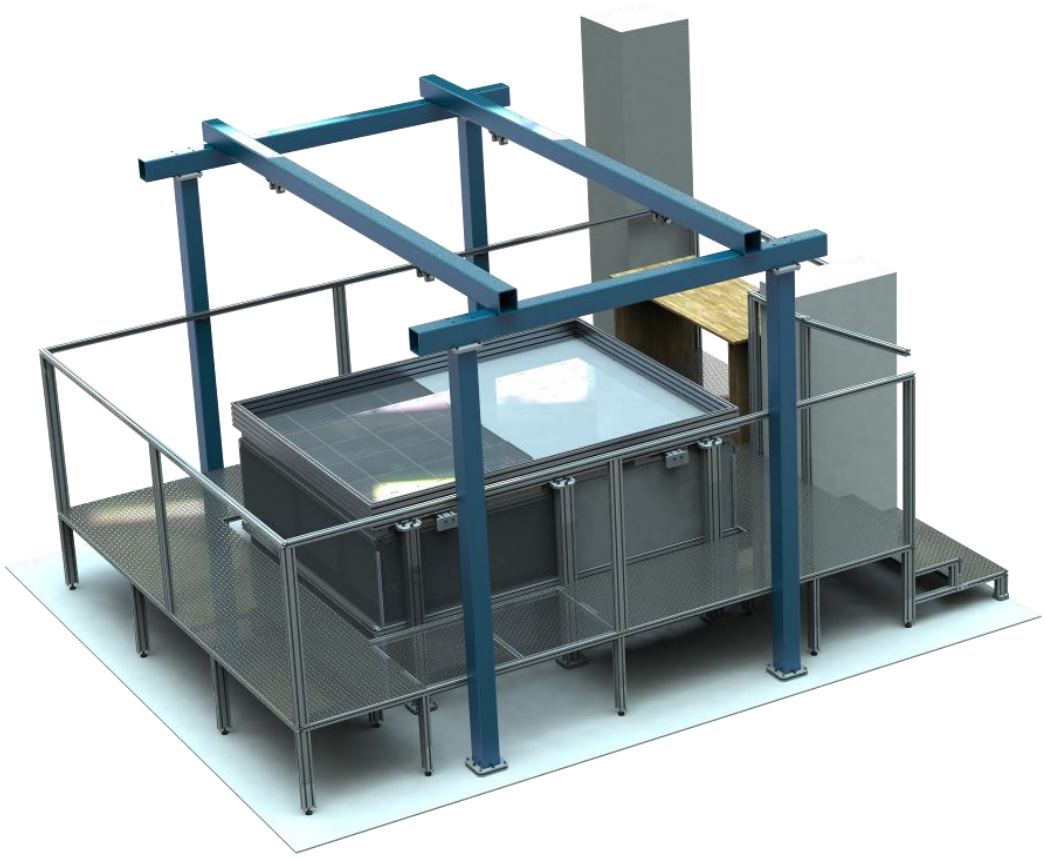
Technical Description

Test bench of spacecraft mutual movement





Test bench is intended for use in laboratory conditions for:

- study of motion control algorithms for groups of small spacecraft;
- development of motion control algorithms for a single spacecraft along two axes and around perpendicular to them;
- training of spacecraft control management skills.

Test bench is capable of performing the following functions:

- imitation of free (in one rotational and two linear degrees of freedom) orbital flight of the microsatellite under the action of torque and linear accelerators from onboard microsatellite devices;
- the ability to control the capacity of the test bench for installation of test object weighing up to 10 kg;
- using the system of independent measurements to determine the position of test object with a given accuracy.

Test bench includes the following elements:

1. Work table (work plate with holes, subframe, air distribution system)
2. Round platform with a diameter of 350-450 mm for the installation of test objects (4 pcs)
3. Pressure sector (system of industrial blowers in sound-absorbing boxes)
4. Pedestal (floor, supports, stairs, railings)
5. Crane beam system for table maintenance
6. System of independent measurements (system of cameras and tags, PC, software)
7. Power supply and control unit
8. Duct and communications system
9. Fasteners
10. Set of documentation

Properties:

№	Parameter	Value
1.	Overall dimensions	5000x4000x3000 mm
2.	Power consumption	Up to 18 kW
3.	Dimensions of the working area of the table in which excess weightless pressure is created	1860x2480 mm
4.	Material for the working surface	aluminum
5.	The presence of adjustable supports for adjusting the horizon of the table plane	Yes
6.	Carrying capacity of platforms for test objects	Up to 10 kg
7.	Working body	Atmospheric air
8.	Air supply device	Industrial blowers, 12 pcs.
9.	Working clearance between table surface and platforms	Up to 0.5 mm
10.	Mechanical Horizon Accuracy	Not worse than 0.1 mm
11.	Accuracy of independent measurement system: - by orientation - by position on the table	 Not worse than 1° Not worse than 10 mm