



ADapter and Separation System 200 (AD-SS 200)

The system designed by SITAEL is based on Non Explosive Actuators (NEA) with a the four clamps configuration, derived from the more common two clamps one, typical for the micro and mini class spacecraft. The interface between the satellite and the separation plane is realized by means of an adapter ring, whose lower half is designed to provide for the required 45° contact surfaces retained by the four clamping system.

The separation plane is placed on the top of a cylindrical canister made of aluminum that represents the support structure for both the clamping and the separation systems and the spacecraft, with the aim to withstand the high mechanical loads generated by the launch vehicle during the early launch phases reducing their impact on the satellite structure.

The spacecraft separation is realized by means of eight calibrated separation springs inserted in the canister structure to achieve the desired longitudinal separation trajectory without introducing residual angular velocities.

The separation springs are compressed while the spacecraft is in the retained position and are instead free to extend at the instant of the clamp systems opening without the introduction of any additional actuators; the tuning of the separation spring is available in order to achieve the required separation velocity, according to the overall spacecraft mass, and to compensate the eventual static unbalancing of the spacecraft, by means of shims.



AD-SS 200 Clamping system



AD-SS 200 - open configuration

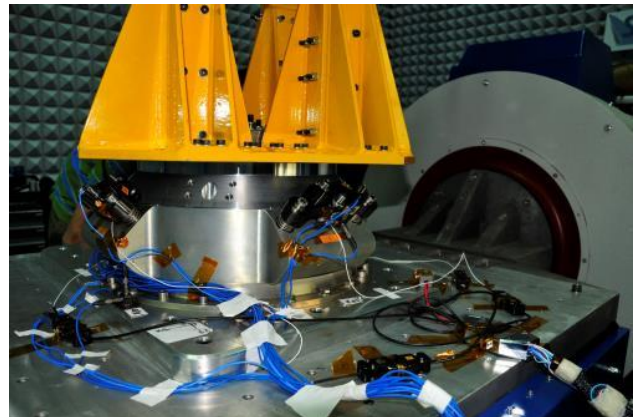
Technical Information

SPECIFICATIONS

Maximum payload mass	Up to 200 kg
Separation velocity (@max. P/L mass)	up to 0.5 m/s
Separation velocity	up to 2 m/s
Residual angular velocity (according to the P/L MCI)	2 to 10 deg/sec
Voltage supply	22 V
Current supply	8.75 A (each NEA)
Power Consumption	770 W
Operating Temperature	-65 °C / +70 °C
Size	Ø476x148 closed configuration Ø520x170 open configuration

System qualification

- Functional test (NEA actuation verification, opening dynamics verification, component level testing)
- Vibration test campaign
- TVC test campaign
- Separation verification test campaign



AD-SS 200 Test campaign

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