

Release of satellites into space

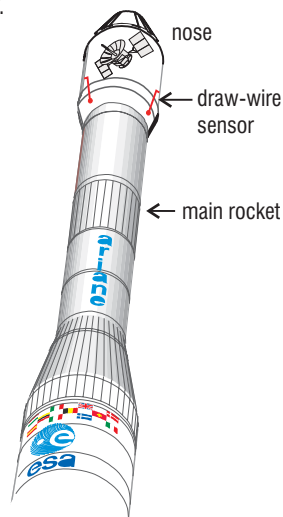
In order to be able to launch a satellite from the Ariane rocket unobstructed into space, the nose cone section, together with the side shield, have to be separated from the main rocket immediately before the release of the satellite.

Simultaneous and controlled activation of a series of preloaded springs, provide the propulsion force for the separation of the nose cone and side shield.

It is of vital importance that the section separates itself in an absolute linear motion from the main rocket, with-out any non-linear tumbling movement that could cause damage to the satellite.

The separation movement is controlled by 3 Draw-wire sensors mounted on the booster rocket. The ends of the draw wires are attached to the nose cone section via a preset and rated breaking point connector. These connectors automatically disconnect the wire from the nose cone at the end of the measuring-range of the sensor.

Immediately following the separation of the draw-wire from the nose cone section, the draw wire is automatically retracted in its housing, in order to avoid damage to the satellite during its subsequent separation from the carrier.



Technical details

- Measuring range: 500 mm
- Resolution: 0,1 %

System configuration

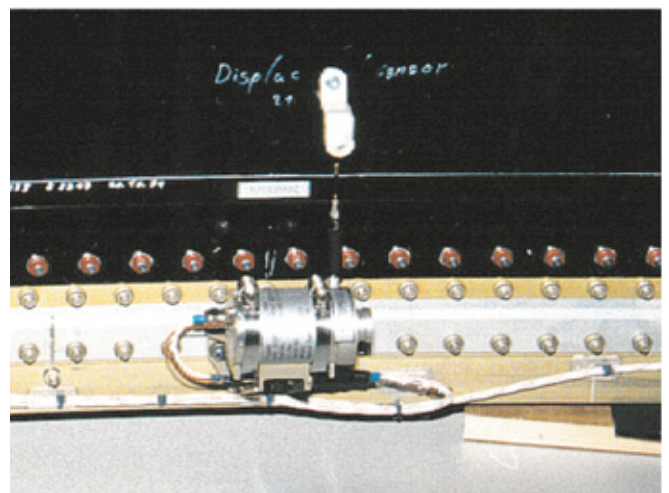
- WDS-500-MP-P-SPL
- Draw-wire sensor (modified special design)

Ambient conditions

- Temperature range:
 - rapid temp. drop from + 60 °C down to -250 °C
- Resistant to high acceleration forces
- Resistant to electromagnetic radiation
- To be able to function in a zero gravity environment
- To be able to withstand a rapid drop in air pressure and operate in a vacuum

Reasons for choosing the system

- High Linearity
- Compact, light and reliable construction in combination with large measuring range
- Tested and proven high reliability



Pic: Daimler Benz Aerospace Dornier GmbH, Friedrichshafen