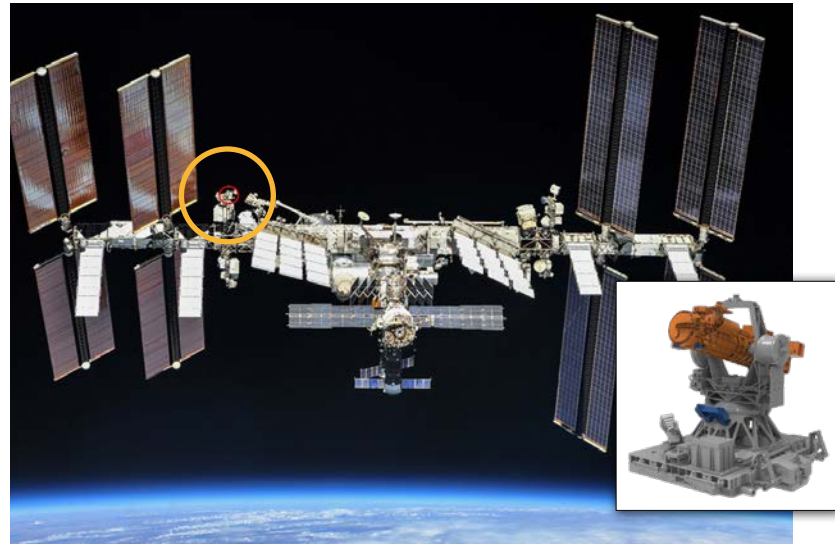




Product



Images courtesy of NASA

Custom EBR Brake

Application

International Space Station Telescope

Highlights

- Custom electromagnetic "Power Off" brake
- 3 ft.lb. Holding torque
- 50 Millisecond reaction time
- Infinite Angular Alignment Capability (IAAC)
- 8 Watt power draw
- Advanced friction disc material

A reliable braking solution was required for the new Coronal Diagnostic Experiment (CODEX) telescope installed on the International Space Station (ISS). The solar coronagraph telescope will measure electron density, velocity and temperature of the solar wind. The mission will help increase the accuracy of sun models which are important for basic science but also space weather forecasting which is critical as the world relies heavily on satellites that are affected by solar wind.

The brakes are used in the telescope's Az and El axes to hold the 5 ft. long, 556 lb. unit motionless when power is turned off. This prevents damage to the telescope that may be caused by any uncontrolled motion.

NASA engineers collaborated with Formsprag Clutch to develop a custom brake to meet the 3 ft.lb. minimum holding torque and <10W power draw requirements of this challenging zero-gravity application.

The new Formsprag custom EBR "Power Off" lightweight holding brake utilizes an advanced friction disc material with a 1.30 Cf (Coefficient of Friction). The unit features a 50 millisecond reaction time and a bobbinless coil for an extended service life. The 3 in. dia. electromagnetic brake has Infinite Angular Alignment Capability (IAAC) and produces 3 ft.lbs. of torque for operation in a planetary actuator gear set. The brake is rated at only 8 watts of power and releases at around 4 watts.

US (Application Assistance)
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