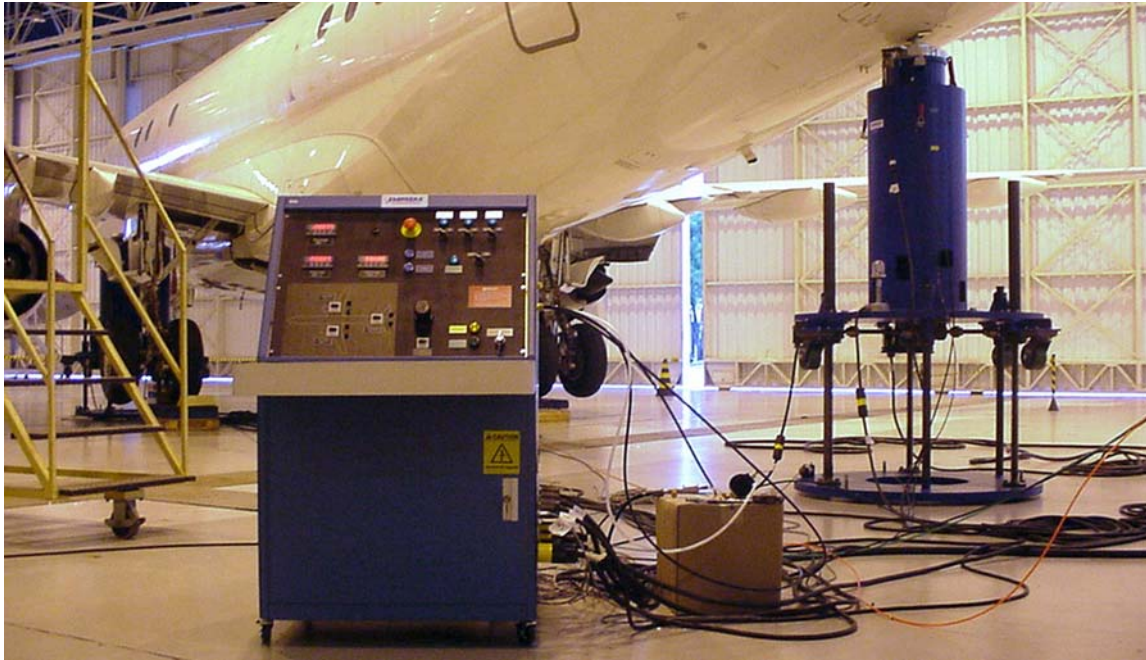


## Soft Support System for Ground Vibration Testing at Embraer – Sao Paulo, Brazil

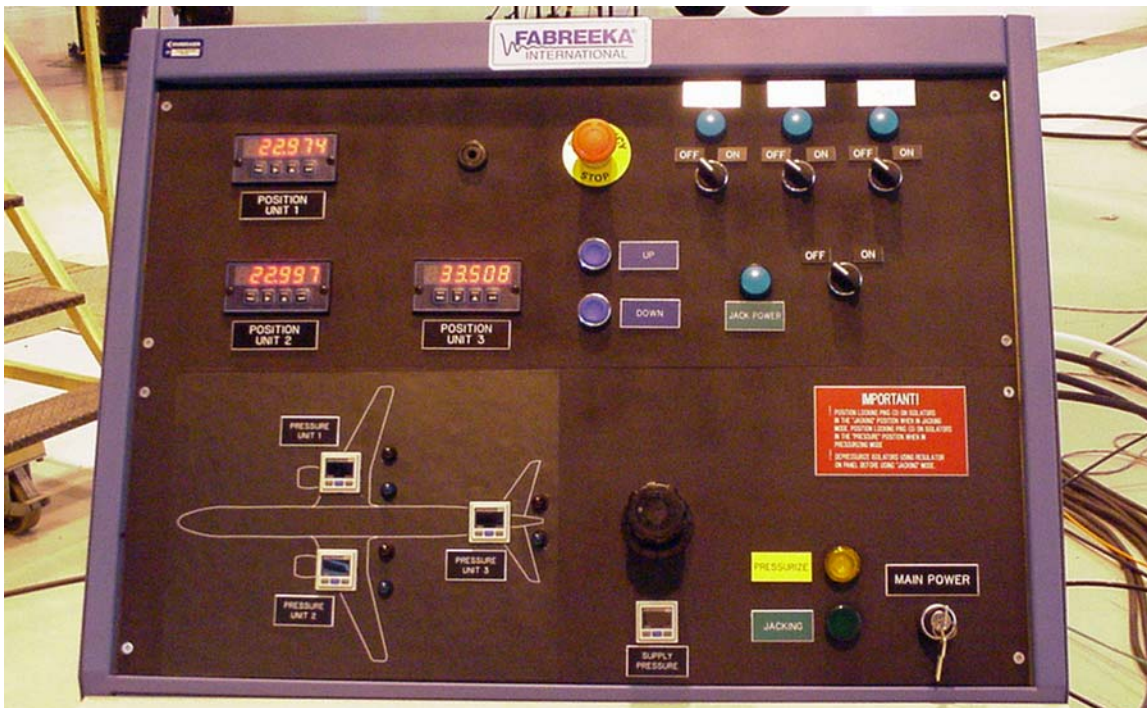


Embraer has recently begun the certification process for their new 190 aircraft and will be conducting testing for the aircraft during 2004. The 190 program requires structural and dynamic testing as part of the certification process.





The 190 aircraft is supported by a Fabreeka® soft support system (SSS) when undergoing ground vibration testing (GVT). The 190 aircraft weighs approximately 111,000 lbs (55.5 tons). The Fabreeka® SSS includes jacking units to raise the aircraft off the landing gear.



Pictured above is the control console for the SSS. When operating in the "jacking" mode, the isolators can be raised individually or simultaneously to raise the aircraft on its jack points. In the test or "pressurized" mode, digital pressure gauges are used to monitor the operating pressure of the isolators. The gauges are accurate to 0.1 psi and are also used to verify the aircraft weight.



Shown at left, the fuselage of the aircraft is supported on a PAL 133-60P pneumatic isolator (0.7 Hz vertical, 0.5 Hz horizontal). The jacking unit raises the fuselage approximately 21" (530 mm).

The aircraft is supported under the left and right wings (shown below) by a PAL 416-60P isolator (0.7 Hz vertical, 0.5 Hz horizontal). The jacking units for all three isolators have a maximum travel of 33" (840 mm) for the 190 aircraft.





Once the aircraft is raised by the jacks, the landing gear will be retracted for the GVT. The isolators will then be pressurized, decoupling the 190 aircraft from the ground.

