

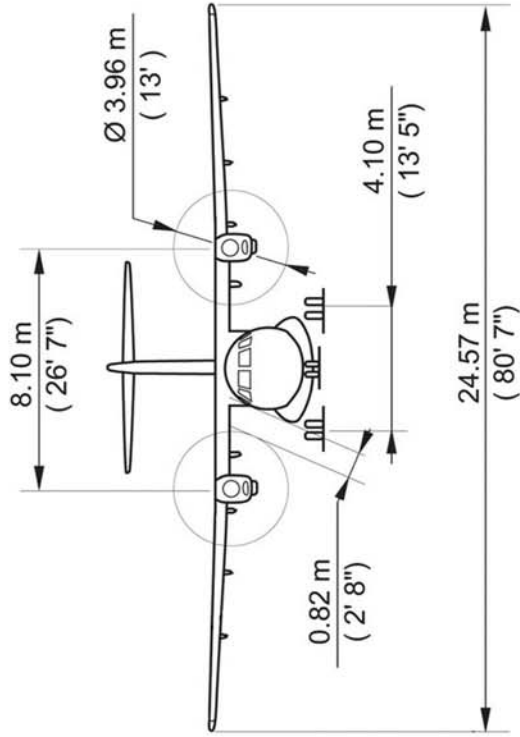
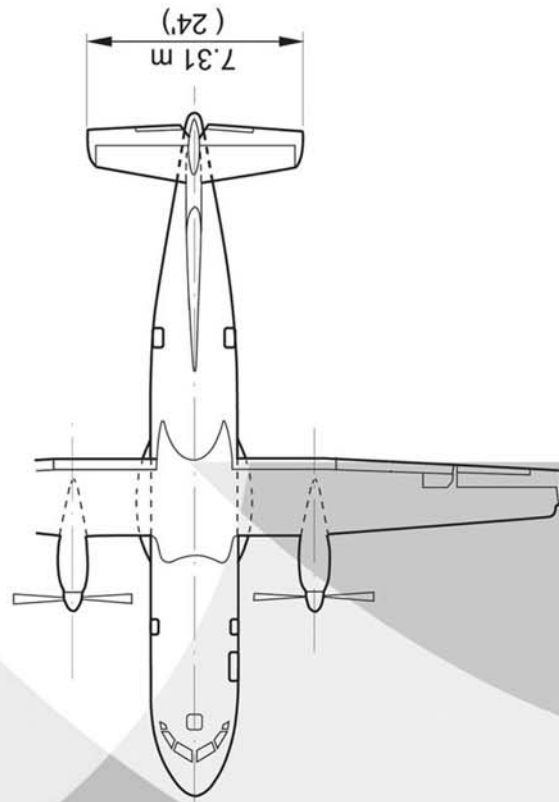
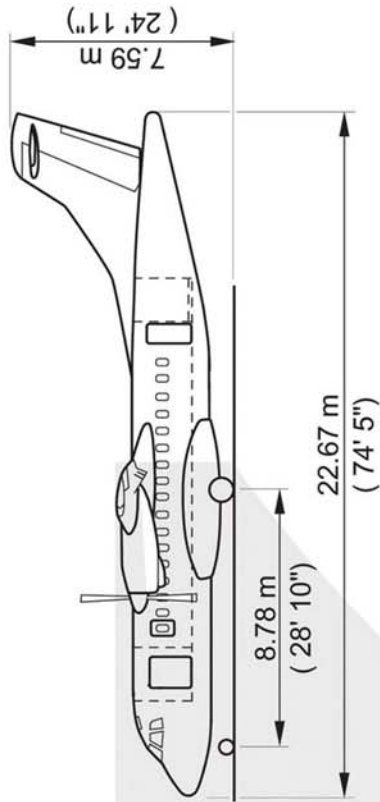
Soft Support System for Ground Vibration Testing at EADS Sogerma – Bordeaux, France



The European Aerospace and Defense System (EADS) Sogerma in Bordeaux, France, have modified the Alenia ATR42 aircraft to monitor weather patterns in and around metro France. Due to the addition of equipment necessary to perform the data collection, which changed the airframe and wing mass, a new modal analysis of the aircraft was required. To accomplish the analysis, a ground vibration test (GVT) was performed, which required using a Fabreeka soft support system (SSS). The SSS includes three low frequency, pneumatic isolators with leveling valves.



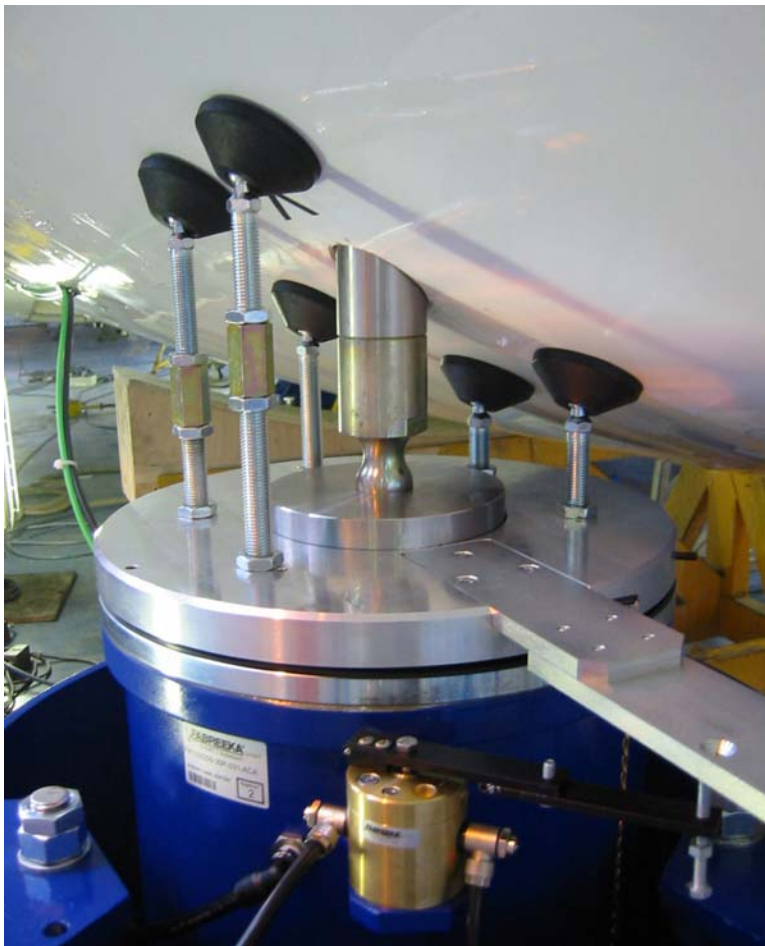
ATR 42 General Arrangement



Dimensions

Overall length	22.67 m	74 ft 5 in
Wing span	24.57 m	80 ft 7 in
Height	7.59 m	24 ft 11 in

ATR 42-300/-320



The pneumatic isolators support and "float" the aircraft (above) during modal testing using the jack support points on the landing gear (2) and at the nose (1). This aircraft was first lifted on mechanical jacks, then the isolators were installed beneath the jack points and the aircraft was lowered onto the isolators.

One PAL 133-30P (shown at left) is used to support the nose. This isolator can support and lift 13,300 lbs (6,000 Kg). The vertical and horizontal natural frequencies are 1.0 Hz and 1.5 Hz.



To support the landing gear, two PAL 255-30P isolators are used. Each has a load capacity of 25,500 lbs (11,500 Kg) with a vertical natural frequency of 1.0 Hz and a horizontal natural frequency of 1.5 Hz.