

Gas Guns for Aircraft Impact Testing

State-of-the-art equipment for precise simulation of birdstrike and extreme hail.



Whether for RandD or certification, it's essential to safeguard UAM vehicles, helicopters and larger aircraft against birdstrike and extreme weather conditions. While the windscreens are particularly vulnerable, the frames are also susceptible to damage. With regard to UAM, depending on the size and durability of the aircraft, mid-air collision with a large bird or hailstone could have disastrous consequences.

A Cutting-Edge Solution for Birdstrike and Extreme Weather

The Impact Gas Gun offers the ideal solution for OEMs as well as windscreen and frame suppliers in ensuring their products will withstand damage from severe birdstrike and hail. Not only does it fire projectiles of different forms and sizes with pin-point accuracy, it offers great user control over the pressure and speed of each shot, allowing repeatability for reliable results. As a method of evaluation it can adhere to both EASA-CS-23.775 and FAA-AC-33.78 standard test procedures, depending on the specific product's certification requirements.

Key functions

Shoots gelatin and ice projectiles (simulating birds and hailstones) of masses between 20g and 1kg – adapted with a sabot

Fires at velocities between 50 and 150 m/s (180 to 540 km/h) – force of shot produced by a pressurized gas tank at the end of the barrel

Precise pressure control to allow regulation of the output speed, ensuring repeatability of test conditions for reliable results

Laser pointing system for accurate target location

Safety features

- Mechanical and electrical restrictions to avoid unintended firing
- Pressure leak detection
- Emergency stop and rearm buttons
- Emergency stop if impact-room door is open

Specifications

- Total weight = 3500kg
- Length: 9 m; height: 1.5 m
- Low working pressure, from 0.5 to 6 bar
- Low electrical power requirement

Adaptable to your specific needs

At Applus+ Laboratories we take pride in offering turnkey solutions and will be more than happy to adjust the test bench to your individual needs.

If you require equipment for impact testing of jet engines, we also develop highly-advanced test benches to be used in adherence with the FAA-AC-33.76 test standard.