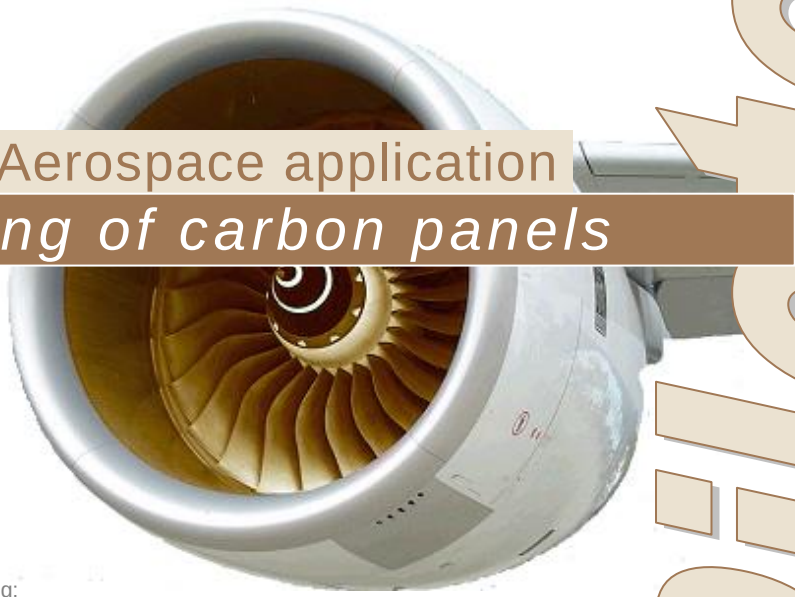
# Tool wear and breakage monitoring system – Aerospace application

## *Boring of carbon panels*



Several thousand 1.5-mm holes are drilled into a 3-mm carbon panel, which is used in the fabrication of jet engine cowlings.

The carbon panels to be machined are mounted on **a foam-coated steel plate, which acts as a backing liner**. WattPilote **detects the moment** when the carbon panel is completely bored (when the tool starts to bore into the foam) and **stops the boring cycle immediately.**

### ► Cycle time optimization

As soon as a hole in the carbon panel is completely bored, the unit returns and the next boring cycle starts.

### ► Quality control

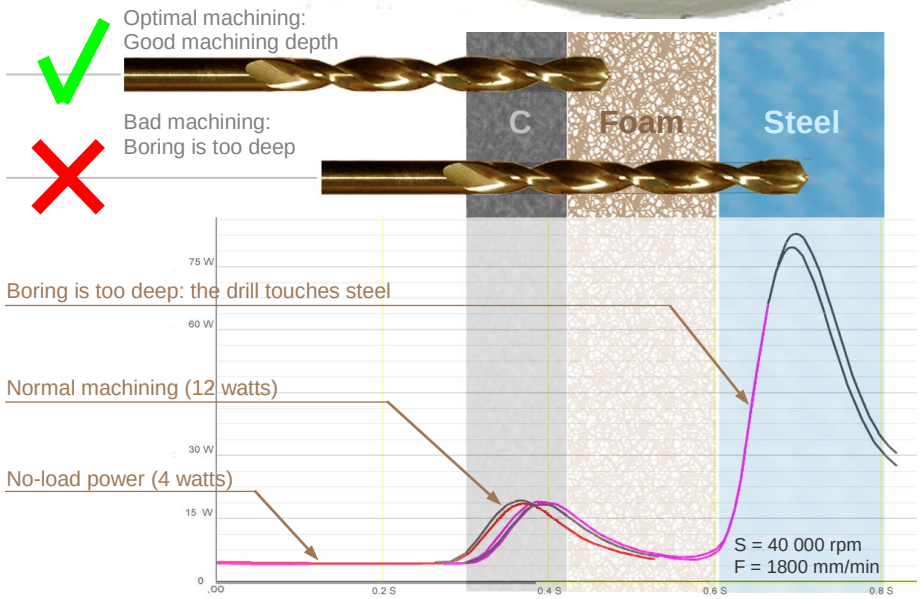
WattPilote controls the execution of all boring cycles.

### ► Tool protection

The exact position of the panel is unknown. The WattPilote system **prevents penetration depth from becoming too large** and avoids the deformation or breakage that can occur if the boring tool **touches the steel plate.**

### ► Detection of tool breakage

Even if a boring tool should break, carbon panel quality is still assured.




## Improved Quality and Cost Savings

| Holes / tool | Panel fit quality | Tool lifetime | Machining cycle time |
|---|---|---|---|
| 100 % | 100% | + 40% | -30% |

The statistics above were gathered from a production machine using a WattPilote system.

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