

New method for aircraft leak testing



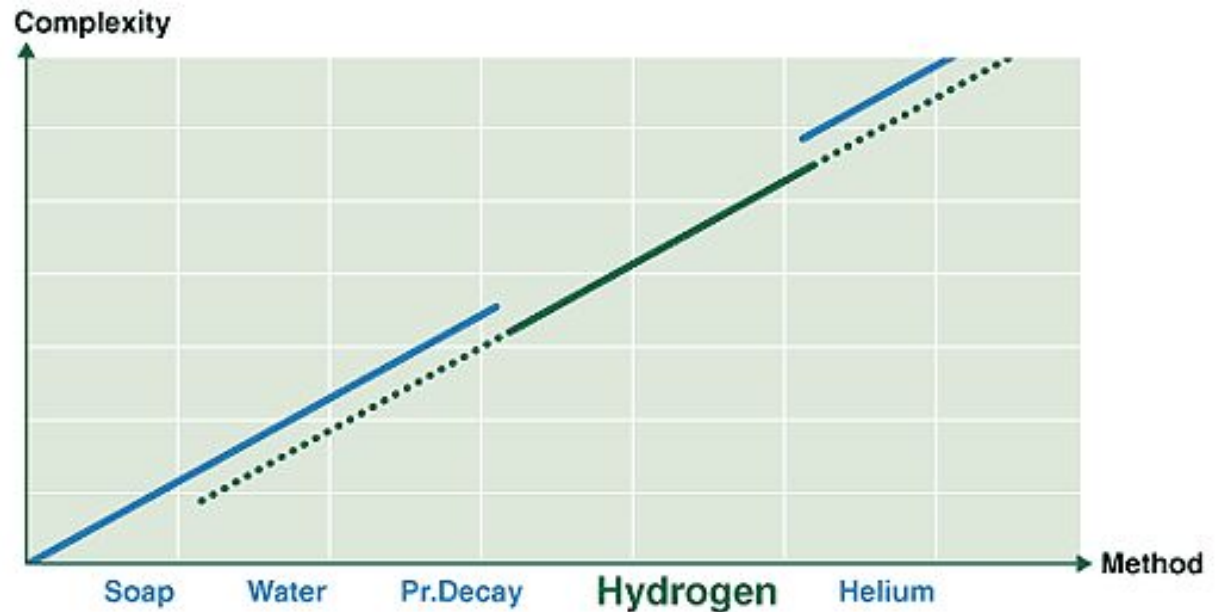
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Leak testing methods



- Soap
- Water bath
- Pressure decay
- Tracer gas
 - Hydrogen
 - Helium



Hydrogen Trace Gas?



- Non flammable (*5% hydrogen in nitrogen: Formiergas 95/5*)
- Low background (0.5 ppm)
- Easily dispersed
- Non sticking
- Inexpensive
- Environmentally friendly, sustainable
- Non corrosive
- Non toxic



Hydrogen Leak Detector H2000



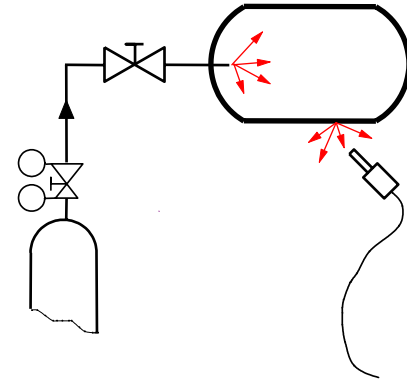
- Robust and suitable for industrial environment
- No gas sampling (*no pumps, no filters*)
- Maintenance free
- Short response time, quick recovery
- Battery operated, mobile
- Easy to calibrate on site





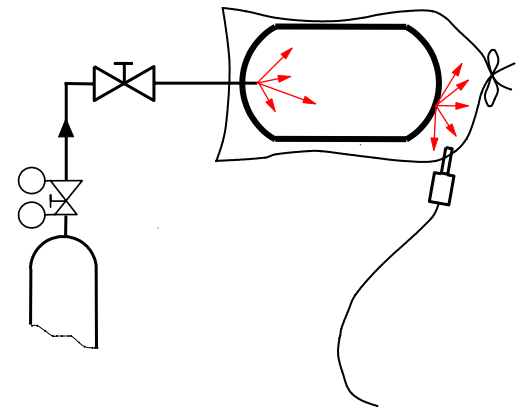
Leak locating

Sensitivity: 5×10^{-7} mbarl/s
with Hydrogen Trace Gas



Integral testing

Simple chamber test at
atmospheric pressure



Example: Inflatable life raft



Pin pointing leaks for maintenance and repair

Application examples



- **Component testing**
Fuel ducts, bleed air ducts
(Eaton Aeroquip)
- **Assembly testing**
Galley cooling system
(Airbus: A340, A380)
- **Maintenance and repair**
Fuel systems
(Tornado, Eurofighter, Eurocopter: NH90)



Locating fuel leakages



- Gas pressure: typ. 1-5 psig
- Ensure gas spreads throughout the volume
- Search - repair, and check again (gas spillage no problem)

- Gas leakage 10^{-4} cc/s
= no drip of jet fuel





Main advantages over helium

- Hydrogen is much less expensive than helium
- Hydrogen disperses much quicker than helium



Leak Testing with Hydrogen Trace Gas



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